

## SEQUENCE LISTING

<110> GROSJEAN-COURNOYER, MARIE-CLAIRE  
 DENFERT, CHRISTOPHE DIDIER  
 FIRON, ARNAUD  
 VILLALBA, FRANCOIS  
 LEBRUN, MARC-HENRI  
 BEFFA, ROLAND

<120> MUTAGENESIS OF ASPERGILLUS FUNGI AND IDENTIFICATION OF  
 GENES ESSENTIAL FOR GROWTH

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<210> 6

<211> 530

<212> PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 6

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Gly	Val	Ala	Cys	Ile	Lys	Pro	Val	Glu	Ser	Leu	Pro	Gln	Lys	Glu	Ser
			20					25					30		
Gln	Ser	Glu	Asn	Pro	Tyr	Glu	Val	Thr	Lys	Glu	Asp	Lys	Val	Gln	Pro
		35					40					45			
Glu	Asn	Leu	Pro	Pro	Ala	Gln	Ile	Ser	Leu	Thr	Asp	Cys	Leu	Ala	Cys
	50					55					60				
Ser	Gly	Cys	Val	Thr	Ser	Ala	Glu	Ala	Val	Leu	Ile	Ser	Leu	Gln	Ser
65					70					75				80	
His	Thr	Glu	Val	Leu	Asn	Thr	Leu	Asp	Ser	Asp	Gly	Arg	Ile	Phe	Val
				85					90					95	
Ala	Ser	Val	Ser	Pro	Gln	Val	Arg	Ala	Ser	Leu	Ala	Ala	Thr	Tyr	Gly
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Ile	Thr	Glu	Arg	Glu	Ala	Lys	Tyr	Met	Ile	Asp	Gln	Phe	Leu	Met	Gly
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Pro	His	Gly	Leu	Arg	Ala	Gly	Gly	Lys	His	Gly	Asn	Gly	Phe	Thr	Trp
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Val	Val	Asp	Thr	Asn	Val	Met	Arg	Glu	Ala	Val	Leu	Ala	Leu	Thr	Ala
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Asp	Glu	Val	Thr	Ser	Ser	Leu	Leu	Ser	Thr	Gly	Ser	Gly	Ser	Leu	Pro
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Lys	Ser	Pro	Ile	Leu	Ser	Ser	Ala	Cys	Pro	Gly	Trp	Ile	Cys	Tyr	Ala
			180					185					190		
Glu	Lys	Thr	His	Pro	Phe	Ile	Leu	Pro	His	Leu	Ser	Arg	Leu	Lys	Ser
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Pro	Gln	Ala	Leu	Ser	Gly	Thr	Phe	Leu	Lys	Ser	Val	Leu	Ser	Lys	Ala
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Leu	Gly	Val	Pro	Pro	Ser	Gln	Ile	Trp	His	Leu	Ala	Ile	Met	Pro	Cys
225					230					235				240	
Phe	Asp	Lys	Lys	Leu	Glu	Ala	Ser	Arg	Glu	Glu	Leu	Thr	Asp	Ile	Ala
				245					250					255	
Trp	Ala	Ser	Thr	Phe	Thr	Gln	Ser	Gln	Thr	Thr	Pro	Val	Arg	Asp	Val
			260					265					270		
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		275					280					285			
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	290					295					300				

Leu Thr Pro Phe Pro Asp Gln Ala Leu Glu Ser Phe Leu Phe Ser Lys  
 305 310 315 320  
 Ser Ser Ser Gly Gln Thr Val Glu Ser Gly Thr Ser Gly Gly Tyr Leu  
 325 330 335  
 His His Val Leu Gln Ile Phe Gln Ala Arg Asn Pro Gly Ser Lys Ile  
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 Val Thr Gln Arg Gly Arg Asn Ala Asp Val Val Glu Tyr Val Leu Met  
 355 360 365  
 Ser Ser Gly Asp Glu Pro Leu Phe Arg Ala Ala Arg Tyr Tyr Gly Phe  
 370 375 380  
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 385 390 395 400  
 Arg Leu Pro Gly Ala Lys Pro Gln Ala Val Ser Ser Ser Ala Asn Arg  
 405 410 415  
 Arg Gln Pro Met Ser Arg Asn Ala Ala Pro Ala Gly Thr Gly Ala Asp  
 420 425 430  
 Tyr Ala Tyr Val Glu Val Met Ala Cys Pro Gly Gly Cys Thr Asn Gly  
 435 440 445  
 Gly Gly Gln Ile Arg Ile Glu Asp Ala Arg Glu Ala Val Pro Asn Ala  
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 Leu Lys Glu Thr Ser Thr Glu Thr Pro Val Ala Ala Pro Lys Pro Thr  
 465 470 475 480  
 Pro His Glu Gln Arg Ala Trp Leu Ala Arg Val Asp Glu Ala Tyr Tyr  
 485 490 495  
 Ser Ala Asp Ser Asp Ser Glu Gly Ser Val Thr Thr Glu Pro Val Ser  
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 Glu Lys  
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<210> 7

<211> 942

<212> DNA

<213> *Aspergillus fumigatus*

<400> 7

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actgggaagt cgaccttgct caagagactc ttcgctgaat acccgatac tttcgattta 180
tccgtgtctc gtacgtctaa ccccttgcca accctcattg actatgcctg cgaattgttt 240
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&lt;210&gt; 8

&lt;211&gt; 600

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 8

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ttggaatatg cggcgcagcc tggctctcat gataagattg tcgtgaacga tgacctggag 540
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&lt;210&gt; 9

&lt;211&gt; 200

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 9

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Pro Ser Gly Thr Gly Lys Ser Thr Leu Leu Lys Arg Leu Phe Ala Glu
      20              25              30

Tyr Pro Asp Thr Phe Asp Leu Ser Val Ser His Thr Thr Arg Ala Pro
      35              40              45

Arg Pro Gly Glu Glu Asn Gly Arg Glu Tyr Tyr Phe Thr Thr Lys Glu
      50              55              60

Asp Phe Leu Asp Leu Val Ser Lys Asn Ala Phe Ile Glu His Ala Gln
      65              70              75              80

Phe Gly Gly Asn Tyr Tyr Gly Thr Thr Val Gln Ala Val Lys Asp Val
      85              90              95

Ala Gln Lys Gly Lys Ile Cys Val Leu Asp Ile Glu Met Arg Gly Val
      100              105              110

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Lys Gln Val Lys Arg Thr Asp Leu Asp Ala Arg Phe Leu Phe Leu Ala  
 115 120 125  
 Pro Pro Ser Leu Glu Glu Leu Glu Lys Arg Leu Arg Gly Arg Ala Thr  
 130 135 140  
 Glu Thr Glu Glu Ser Leu Thr Lys Arg Leu Ala Gln Ala Lys Asn Glu  
 145 150 155 160  
 Leu Glu Tyr Ala Ala Gln Pro Gly Ser His Asp Lys Ile Val Val Asn  
 165 170 175  
 Asp Asp Leu Glu Lys Ala Tyr Lys Glu Leu Arg Asp Trp Ile Val Asp  
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 Gly Gly Asn Phe Gly Ala Arg Gln  
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&lt;210&gt; 10

&lt;211&gt; 2059

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 10

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<210> 11  
 <211> 1923  
 <212> DNA  
 <213> *Aspergillus fumigatus*

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<210> 12  
 <211> 641  
 <212> PRT  
 <213> *Aspergillus fumigatus*

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		35					40					45					
Ser	Ser	Ala	Ala	Pro	Ile	Tyr	Lys	Lys	Glu	Lys	Tyr	Thr	Leu	Lys	Trp		
		50				55					60						
Lys	Gln	Val	Lys	Asp	Phe	Asn	Leu	Ile	Phe	Val	Ala	Val	Tyr	Gln	Ser		
	65				70					75					80		
Leu	Leu	His	Leu	Gly	Trp	Ile	Asp	Lys	Leu	Leu	Asp	Asn	Val	Ser	Thr		
				85					90					95			
Ile	Phe	Ile	Asp	Leu	Tyr	Lys	Asp	Glu	Leu	Arg	Ser	Thr	Arg	Ala	Arg		
			100					105					110				
Ile	Ile	Glu	Tyr	Pro	Phe	Asp	Lys	Tyr	Phe	Asp	Gln	Gln	Val	Arg	Glu		
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Leu	Glu	Asp	Asn	Ala	Gly	Ala	Pro	Thr	Ser	Glu	Ser	Leu	Val	Val	Glu		
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Ile	Asn	Glu	Arg	Lys	Asp	Pro	Leu	Val	Ser	Ser	Asp	Asn	Gly	Gly	Pro		
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Pro	Pro	Pro	Pro	Val	Pro	Val	Ala	Gln	Gly	Val	Ala	Thr	Ser	Asp	Glu		
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Arg	Arg	Ala	Arg	Lys	Ala	Ala	Asn	Ala	Ser	Ala	Thr	Ala	Ser	Ser	Gly		
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Asp	Glu	Ser	Ile	Arg	Lys	Gly	Lys	Thr	Leu	Lys	Ser	Gly	Lys	Lys	Met		
	225				230					235					240		
Arg	Lys	Trp	Asp	Ala	Asp	Gly	Phe	Ala	Asp	Glu	Asp	Asp	Gly	Lys	Val		
				245					250					255			
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Val	Glu	Ala	Val	Ala	Gln	Glu	Ser	Trp	Gly	Arg	Arg	Thr	Gly	Lys	Gly		
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Gln	Phe	Val	Leu	Lys	Asp	Leu	Gly	Asp	Glu	Val	His	Ser	Ile	Leu	Glu		
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Asn	Ala	Asp	His	Glu	Lys	Thr	Lys	Ser	Ser	Ser	Ser	Thr	Gly	Phe	Val		
	305				310					315					320		
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				325					330					335			

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 Glu Asp His Leu Leu Lys Lys Asn Val Ala Arg Glu Ala Ala Val Arg  
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 Leu Cys Gln Gly Val Gln Arg Glu Leu Val Gly Lys Lys Thr Gly Asn  
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 Phe Gln Ser Val Asp Ala Ala Leu Arg Ser Ala Met Glu Ser Ser Leu  
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 Arg Lys Ile Leu Thr Pro Thr Ser Ser Leu Asp Leu Leu Arg Glu Ile  
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 Asp Ala Val Arg Ser Pro Thr Ser Lys Gly Gln Ala Pro Arg Pro Tyr  
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 Val Ile Ser Ile Val Gly Val Asn Gly Val Gly Lys Ser Thr Asn Leu  
                   435                  440                  445  
 Gly Lys Ile Cys Tyr Phe Leu Leu Gln Asn Asn Tyr Arg Val Leu Ile  
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 Ala Ala Cys Asp Thr Phe Arg Ser Gly Ala Val Glu Gln Leu Arg Val  
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 His Ala Arg Asn Leu Lys Glu Leu Ser Thr Arg Glu Asn Ala Gly Glu  
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 Val Glu Leu Tyr Glu Lys Gly Tyr Gly Lys Asp Ala Ala Asn Val Ala  
                   500                  505                  510  
 Lys Asp Ala Val Glu Tyr Gly Ala Ala Asn His Phe Asp Val Val Leu  
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 Ile Asp Thr Ala Gly Arg Arg His Asn Asp Gln Arg Leu Met Ser Ser  
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 Leu Glu Lys Phe Ala Lys Phe Ala Lys Pro Asp Lys Ile Phe Met Val  
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 Gly Glu Ala Leu Val Gly Thr Asp Ser Val Met Gln Ala Arg Asn Phe  
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 Asn Gln Ala Phe Gly Thr Gly Arg Asn Leu Asp Gly Phe Ile Ile Ser  
                   580                  585                  590  
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 His Ala Thr Gly Ile Pro Ile Val Phe Leu Gly Val Gly Gln His Tyr  
                   610                  615                  620  
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 Lys

<210> 13  
 <211> 1564  
 <212> DNA  
 <213> *Aspergillus fumigatus*

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 <213> *Aspergillus fumigatus*

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<210> 15

<211> 460

<212> PRT

<213> *Aspergillus fumigatus*

<400> 15

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Ala Thr Glu Lys Glu Leu Tyr Ser Lys Leu Trp Ala Asp Leu Glu Gly
      35              40              45

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Tyr Asn Leu Asp Phe Glu Ser Pro Lys Asn Asp Lys Leu Ser Leu Phe
      50              55              60

```

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Glu Leu Gly Asp Arg Val Tyr Asp His Met Leu Leu Leu Pro Pro Lys
      65              70              75              80

```

```

Ser Lys Gly Tyr Gly Pro Ser Leu Thr Pro Lys Asn Ile Ile Asp Phe
      85              90              95

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Met Asn Lys Asp Gly Asn Val Leu Leu Ala Leu Ser Gly Lys Ser Thr
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Thr Ala Ser Ala Ile Ser Ser Leu Leu Leu Glu Leu Asp Leu His Leu
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Pro Val Asp Arg Ser Ser Val Thr Val Asp His Phe Asn Tyr Asp Thr
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```

Leu Ser Ala Ser Asp Lys His Asp Val Leu Leu Leu His Arg Pro Gly
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```

Lys Leu Arg Ser Asp Thr Lys Ala Phe Phe Asp Gly Glu Gly Val Val
      165             170             175

```

```

Ala Phe Pro Arg Ala Val Pro His Thr Leu Gly Asp Ala Asn Pro Leu
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Ile Ala Pro Ile Leu Arg Ala Pro Ala Thr Ala Tyr Ser Tyr Asn Pro
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 260 265 270  
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 Pro Glu Lys Leu Asn Pro Lys Ile Tyr Arg Ile Lys Asn Glu Thr Val  
 305 310 315 320  
 Phe Ser Ile Glu Leu Ser Glu Tyr Asn Tyr Asp Arg Tyr Ala Pro Phe  
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 Glu Val Pro Thr Gly Asp Ala Val Gln Leu Glu Phe Thr Met Leu Ser  
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 Thr Val Tyr Ser Thr Arg Phe Thr Thr Pro Asp Gln His Gly Ile Phe  
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 385 390 395 400  
 Lys Leu Glu Val Thr Val Arg His Phe Ala His Asn Glu Tyr Pro Arg  
 405 410 415  
 Ser Trp Lys Ile Ser Gly Gly Trp Val Trp Ile Ala Gly Leu Trp Ser  
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<211> 2376

<212> DNA

<213> *Aspergillus fumigatus*

<400> 16

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&lt;210&gt; 17

&lt;211&gt; 2145

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 17

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<210> 18

<211> 715

<212> PRT

<213> *Aspergillus fumigatus*

<400> 18

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Ser Pro Val Ile Ser Ile Thr Tyr Glu Asp Thr Ala Val Leu Arg Glu
 35          40          45

Gly Asp Lys Ala Val Val Gln Tyr Thr Gly Ala Ser Gly Asn Pro Ile
 50          55          60

Phe Gly Leu Ile Asn Ala Val Gln Glu Leu Arg Lys Asp Phe Pro Phe
 65          70          75          80

Leu Asn Ser Lys Asp Glu Lys Leu Glu Asn Glu Trp Leu Ser Gln Leu
 85          90          95

Glu Ala Phe Ala Pro Leu Asp Phe Lys Ala Leu Asp Pro Glu Leu Gln
100          105          110

Arg Leu Asp Thr His Leu Leu Leu Arg Ser Phe Val Val Gly Tyr Ala
115          120          125

Leu Ser Thr Ala Asp Ile Ala Leu Trp Gly Ala Ile Arg Gly Asn Arg
130          135          140

Val Ala Val Ala Ala Ile Lys Lys Gly Ser Leu Val Asn Val Thr Arg
145          150          155          160

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Glu	Gly	Ala	Ser	Tyr	Asp	Ile	Ala	Leu	Leu	Asn	Thr	Glu	Lys	Gly	Val	195	200	205	
Val	Thr	Arg	Phe	Pro	Pro	Glu	Pro	Ser	Gly	Tyr	Leu	His	Ile	Gly	His	210	215	220	
Ala	Lys	Ala	Ala	Leu	Leu	Asn	Asp	Tyr	Phe	Ala	His	Glu	Lys	Tyr	Asn	225	230	235	240
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Leu	Glu	Phe	Gln	Asp	Ala	Ile	Ile	Glu	Asp	Leu	Ala	Leu	Met	Gly	Ile	260	265	270	
Lys	Pro	Asp	Lys	Met	Ser	Tyr	Thr	Ser	Asp	Tyr	Phe	Asp	Glu	Leu	Tyr	275	280	285	
Gln	Tyr	Ala	Leu	Gln	Ile	Ile	Lys	Asp	Gly	Asn	Ala	Tyr	Ala	Asp	Asp	290	295	300	
Thr	Glu	Lys	Glu	Val	Met	Ala	Glu	Gln	Arg	Met	Asn	Gly	Lys	Pro	Ser	305	310	315	320
Lys	Arg	Arg	Asp	Ala	Ser	Val	Glu	Glu	Asn	Leu	Ala	Arg	Phe	Glu	Glu	325	330	335	
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Met	Ser	Val	Asp	Asn	Pro	Asn	Lys	Ala	Met	Arg	Asp	Pro	Val	Ile	Tyr	355	360	365	
Arg	Cys	Asn	Pro	Ala	Pro	His	His	Arg	Thr	Gly	Thr	Lys	Trp	Lys	Ile	370	375	380	
Tyr	Pro	Thr	Tyr	Asp	Phe	Ala	Cys	Pro	Ile	Val	Asp	Ser	Ile	Glu	Gly	385	390	395	400
Val	Thr	His	Ala	Leu	Arg	Thr	Ile	Glu	Tyr	Arg	Asp	Arg	Asn	Pro	Gln	405	410	415	
Tyr	Gln	Trp	Phe	Leu	Asp	Thr	Leu	Lys	Leu	Arg	His	Val	Gln	Ile	Trp	420	425	430	
Asp	Phe	Ala	Arg	Met	Asn	Phe	Ile	Arg	Thr	Leu	Leu	Ser	Lys	Arg	Lys	435	440	445	
Leu	Thr	Lys	Leu	Val	Asn	Gln	Gly	Val	Val	Trp	Gly	Trp	Asp	Asp	Pro	450	455	460	



Arg Phe Pro Thr Ile Arg Gly Ile Arg Arg Arg Gly Met Thr Ile Pro  
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 Ala Leu Arg Glu Phe Ile Leu Lys Gln Gly Pro Ser Lys Asn Ile Thr  
 485 490 495  
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 Pro Val Ala Pro Arg His Thr Ala Ile Leu Lys Lys Asp Met Val Lys  
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 Lys His Gly Lys Asn Pro Ala Val Gly Met Lys Lys Val Val Phe Gly  
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 Asn Thr Val Ile Phe Asp Gln Lys Asp Ala Lys Ser Phe Lys Gln Asp  
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 Glu Thr Asp Pro Thr Ser Gly Ile Val Lys Glu Leu Glu Leu Glu Leu  
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 His Leu Glu Gly Asp Phe Lys Lys Thr Glu Lys Lys Val Thr Trp Leu  
 610 615 620  
 Ser Thr Glu Gly Gln Asp Leu Ile Pro Val Glu Leu Val Asp Phe Asp  
 625 630 635 640  
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&lt;210&gt; 19

&lt;211&gt; 2639

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 19

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<210> 20

<211> 2427

<212> DNA

<213> *Aspergillus fumigatus*

<400> 20

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&lt;210&gt; 21

&lt;211&gt; 809

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 21

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      20           25           30

Gly Arg Leu His Ala Tyr Glu Pro Arg Thr Ala Glu Ala Ser Tyr Leu
      35           40           45

Leu Ala Leu Cys His Leu Gln Asn Gly Gln Val Lys Ala Ala Tyr Asp
      50           55           60

Tyr Ser Arg Asn Phe Gly Ser Arg Gly Thr His Leu Gly Cys Ser Tyr
      65           70           75           80

Val Phe Ala Gln Ala Cys Leu Asp Leu Gly Lys Tyr Leu Glu Gly Ile
      85           90           95

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Asn	Lys	His	Ser	Glu	Thr	Arg	Arg	Gln	His	Leu	Pro	Asp	Ala	Ala	Ala	115	120	125	
Val	Phe	Cys	Leu	Leu	Gly	Lys	Leu	Trp	His	Ala	His	Lys	Asp	Ile	Asn	130	135	140	
Lys	Ala	Val	Glu	Cys	Tyr	Val	Glu	Ser	Leu	Lys	Leu	Asn	Pro	Phe	Met	145	150	155	160
Trp	Asp	Ala	Phe	Gln	Gly	Leu	Cys	Asp	Thr	Gly	Val	Asn	Val	Arg	Val	165	170	175	
Ser	Asn	Ile	Tyr	Lys	Leu	Asn	Ser	Glu	Leu	Leu	Ala	Val	Leu	Ser	Ser	180	185	190	
Ser	Pro	Gln	Ala	Asp	Ala	Glu	Pro	Ile	Ser	Asp	Lys	Ser	Ala	His	Thr	195	200	205	
Asn	Gly	Pro	Leu	Gln	Ala	Gln	Ala	Asn	Val	Asn	Pro	Ser	Ser	Asp	Pro	210	215	220	
Phe	Ala	Ser	Thr	Thr	Ser	Arg	Ser	Asp	Ser	Gly	Thr	Ser	His	Gly	Ser	225	230	235	240
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Ser	Gly	Val	Pro	Ala	Ser	Ile	Val	His	Glu	Gly	Ala	Glu	Thr	Pro	Ser	260	265	270	
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Gly	Ala	Asp	Ala	Ser	Trp	Asp	Pro	Pro	Leu	Ala	Pro	Ala	Arg	Lys	Asn	290	295	300	
Arg	Thr	Ile	Gln	Ala	Ile	Ser	Gly	Glu	Tyr	Pro	Met	Asp	Pro	Pro	Pro	305	310	315	320
Lys	Met	Lys	Pro	Thr	Gly	Ile	Arg	Pro	Arg	Thr	Arg	Thr	Arg	Thr	Glu	325	330	335	
Pro	Glu	Asp	Gln	Ile	Ser	Ala	Gln	Ile	Asp	Arg	Glu	Ala	Thr	Asn	Ala	340	345	350	
Pro	Arg	Val	Gly	Asp	Arg	Lys	Arg	Thr	Val	Ser	Gly	Gln	Val	Ala	His	355	360	365	
Pro	Pro	Thr	Ser	Gln	Pro	Thr	Glu	Pro	Gly	Ala	Pro	Gln	Arg	Arg	Ser	370	375	380	
Val	Arg	Leu	Phe	Asn	Gln	Ile	Lys	Pro	Thr	Thr	Ser	Lys	Leu	Ser	Ala	385	390	395	400

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 Asp Gly Arg Ser Val Pro Ser Ala His Thr His Ala Ile Ser Lys Gly  
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 Glu Leu Phe Ser Lys Leu Ala Ser Gly Phe Phe Ala Leu Cys Arg Tyr  
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 Arg Cys Pro Glu Ser Ile Gln Ile Phe Asn Ser Leu Ser Gln Gly Gln  
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 625 630 635 640  
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 645 650 655  
 Gly Leu Gly Thr Val Tyr Asp Lys Met Gly Lys Leu Asp Phe Ala Glu  
 660 665 670  
 Gln His Phe Arg Asn Ala Ala Ser Ile Asn Pro Thr Asn Ala Val Leu  
 675 680 685  
 Ile Cys Cys Ile Gly Leu Val Leu Glu Lys Met Asn Asn Pro Lys Ala  
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Ala Leu Val Gln Tyr Gly Arg Ala Cys Ser Leu Ala Pro His Ser Val  
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Leu Ala Arg Phe Arg Lys Ala Arg Ala Leu Met Lys Leu Gln Glu Leu  
 725 730 735

Lys Leu Ala Leu Ser Glu Leu Lys Ile Leu Lys Asp Met Ala Pro Asp  
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Glu Ala Asn Val His Tyr Leu Leu Gly Lys Leu Tyr Lys Met Leu His  
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Asp Lys Ala Asn Ala Ile Lys His Phe Thr Thr Ala Leu Asn Leu Asp  
 770 775 780

Pro Lys Ala Ala Gln Tyr Ile Lys Asp Ala Met Glu Ser Leu Asp Asp  
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Asp Glu Glu Asp Asp Glu Asp Met Ser  
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&lt;210&gt; 22

&lt;211&gt; 1836

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 22

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1836

<210> 23

<211> 1836

<212> DNA

<213> *Aspergillus fumigatus*

<400> 23

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<210> 24

<211> 611

<212> PRT

<213> *Aspergillus fumigatus*

<400> 24

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Phe Glu Gly Phe Pro Leu Leu Ala Glu Asn Leu Met Ala Lys Ala Leu
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Asp	Ile	Ser	Leu	Val	Thr	Thr	Gly	Val	Lys	Trp	Glu	Leu	Gln	Tyr	Asp	50	55	60
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Thr	Arg	Asp	Leu	Leu	Glu	Lys	Ile	Lys	Gln	Met	Pro	Val	Thr	Leu	Pro	85	90	95
Glu	Asp	Thr	Leu	Glu	Thr	Tyr	Glu	Phe	Asn	His	Leu	Leu	Arg	Asn	Val	100	105	110
Lys	Glu	Ala	Thr	Leu	Val	Leu	Arg	Asn	Met	Val	Leu	Leu	Lys	Glu	Asn	115	120	125
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Asn	Asp	Ala	Leu	Asp	Ile	Ala	Glu	Glu	Val	Thr	Lys	Phe	Met	Lys	Thr	165	170	175
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Ser	Asp	Arg	Ala	His	Val	Val	Arg	Ala	Leu	Trp	Ala	Leu	Thr	His	Phe	195	200	205
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Pro	Lys	Glu	Thr	Leu	Gln	Gln	Leu	Tyr	Phe	His	Thr	Leu	Leu	Asp	Leu	225	230	235
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Thr	Val	Phe	Val	Pro	Arg	Met	Val	Ala	Leu	Leu	Thr	His	Glu	Gly	Arg	275	280	285
Pro	Asn	Lys	Lys	Glu	Thr	Val	Leu	Gln	Glu	Glu	Lys	Val	Ala	Pro	Pro	290	295	300
Pro	Ser	Asp	Ile	Pro	Arg	Val	Pro	Pro	Glu	Leu	Met	Lys	Glu	Leu	Met	305	310	315
Glu	Leu	Ser	Glu	Pro	Glu	Arg	Ser	Ser	Arg	Trp	Leu	Arg	Cys	Cys	Phe	325	330	335
Val	Glu	Asp	Leu	Glu	Cys	Glu	Ile	Thr	Gln	Ile	Ala	Leu	Trp	Gln	Ala	340	345	350



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           370                                  375                                  380  
  
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 Lys Gly Ile Arg Pro Leu Glu Thr Ala Tyr Thr Phe Glu Gly Phe Pro  
                                   405                                  410                                  415  
  
 Tyr Ile Tyr Cys Lys Trp Ala Asp Asn Ser Lys Pro Ser Lys Thr Cys  
                                   420                                  425                                  430  
  
 Gln Arg Ala Phe Lys Ser Pro Ala Glu Leu Arg His His Val Phe Thr  
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 Glu His Met Asn Leu Lys Pro Thr Glu Thr Pro Gly His Tyr Asn Leu  
           450                                  455                                  460  
  
 Glu Lys Ala Glu Ser Pro Val His Thr Cys Leu Trp Asp Asn Cys Thr  
 465                                  470                                  475                                  480  
  
 Lys Phe Arg Ser Ser Gly Pro Ser Ala Asn Thr Ala Met Val Ala Gly  
                                   485                                  490                                  495  
  
 His Val Ser Ala His Leu Pro Glu Glu Arg Ala Pro Asp Ala Glu Pro  
                                   500                                  505                                  510  
  
 Pro Thr Ser Lys Arg Ala Val Leu Gln Glu Arg Ile Val Arg Lys Trp  
           515                                  520                                  525  
  
 Tyr Tyr Leu Asp Thr Pro Val Asn Glu Arg Gly Glu Pro Phe Gly Val  
           530                                  535                                  540  
  
 Ala Tyr Lys Ala Ala Leu Val Leu Arg Asn Leu Ala Arg Asn Leu Pro  
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 Thr Gly Ile Ala Pro Gln Tyr Asn Gly Leu Ser Trp Lys Lys Ala Val  
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 Phe Leu Ser His Arg Pro Lys Ile Ile Glu Ala Trp Asp Arg Asn Arg  
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 Ser Leu Arg Lys Glu Leu Thr Glu Leu Ile Met Val Ile Glu Lys Glu  
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           610

&lt;210&gt; 25

&lt;211&gt; 1542

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 25

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atggtctaca tcggcatccc caagaactac acggcttcgc cgtcttcctt tgccggaact 60
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ggtttgttga cgccggtgac acgtgtgaga gcagcgctgg acagaggctg acagtctaca 180
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aattgccagg tcctctcgat tgtttcgtca gaggatgtgg acgcctacct gctctccgag 360
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cggactatgg ataagctctt cctcaacggc agcgcctaca tgattggcaa gatgaatggc 660
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&lt;210&gt; 26

&lt;211&gt; 1479

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 26

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ggtccagaga aactcttgga ggtgtggttc gcgccttcgc ctccaggaatt aggtccagcg 180
cagcccgcgc gtctgaaggc tgttcggag gagatctgga aggacatgtt ggatctcgtc 240
aattgccagg tcctctcgat tgtttcgtca gaggatgtgg acgcctacct gctctccgag 300
tctagcatgt tcgtttggcc tcacaaactc atcttgaaga cttgtggtac caccactctt 360
ctgtctggtc tcccacgcac tctcgagatt gccgctttgt tcggtggctt ccccaagtct 420
accgcccctt ctgcggaat ctccgtcgcc gctgcgccct accgcgtctt ctacagccgc 480
aagaacttcc tgttccccga ccgccagcgg ggccctcacc gcagctggag agatgaagtg 540
cggactatgg ataagctctt cctcaacggc agcgcctaca tgattggcaa gatgaatggc 600
gagcactggt acttgtaact gactgaacct cataccatgc tcaccccgcc aacgagcccg 660
ggagccaaga ccgagtttac ggaaacggag accaaggctc tcagtgtacc ccagggcgct 720
gctctgcaga ctgattcgga ggatgagact ttggaagtct tgatgaccga cttggatgag 780
gagaacgcca agcagttcta cctcgagaat gccactgccg ttgcgagaaa ccgttatcgc 840
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actctcttcg aggccaaagc agcgtgagc caggtcgaag acgagtggaa ggaagccaag 1320
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<400> 27																
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Phe	Ala	Gly	Thr	Pro	Ser	Leu	Thr	Ile	Asn	Tyr	Glu	Ala	Thr	Gln	Asp	
			20					25					30			
Leu	Asp	Ser	Thr	Asn	Ala	Phe	Glu	Gly	Pro	Glu	Lys	Leu	Leu	Glu	Val	
		35					40					45				
Trp	Phe	Ala	Pro	Ser	Ala	Gln	Glu	Leu	Gly	Pro	Ala	Gln	Pro	Ala	Gly	
	50					55					60					
Leu	Lys	Ala	Val	Pro	Glu	Glu	Ile	Trp	Lys	Asp	Met	Leu	Asp	Leu	Val	
65					70					75					80	
Asn	Cys	Gln	Val	Leu	Ser	Ile	Val	Ser	Ser	Glu	Asp	Val	Asp	Ala	Tyr	
				85					90					95		
Leu	Leu	Ser	Glu	Ser	Ser	Met	Phe	Val	Trp	Pro	His	Lys	Leu	Ile	Leu	
			100					105					110			
Lys	Thr	Cys	Gly	Thr	Thr	Thr	Leu	Leu	Ser	Gly	Leu	Pro	Arg	Ile	Leu	
		115					120					125				
Glu	Ile	Ala	Ala	Leu	Phe	Gly	Gly	Phe	Pro	Lys	Ser	Thr	Ala	Pro	Ser	
	130					135					140					
Arg	Gly	Ile	Ser	Val	Ala	Ala	Ala	Pro	Tyr	Arg	Val	Phe	Tyr	Ser	Arg	
145					150					155						
Lys	Asn	Phe	Leu	Phe	Pro	Asp	Arg	Gln	Arg	Gly	Pro	His	Arg	Ser	Trp	
				165					170					175		
Arg	Asp	Glu	Val	Arg	Thr	Met	Asp	Lys	Leu	Phe	Leu	Asn	Gly	Ser	Ala	
			180					185					190			
Tyr	Met	Ile	Gly	Lys	Met	Asn	Gly	Glu	His	Trp	Tyr	Leu	Tyr	Leu	Thr	
		195					200					205				
Glu	Pro	His	Thr	Met	Leu	Thr	Pro	Pro	Thr	Ser	Pro	Gly	Ala	Lys	Thr	
	210					215					220					
Glu	Phe	Thr	Glu	Thr	Glu	Thr	Lys	Val	Leu	Ser	Val	Pro	Gln	Gly	Ala	
225					230					235					240	
Ala	Leu	Gln	Thr	Asp	Ser	Glu	Asp	Glu	Thr	Leu	Glu	Val	Leu	Met	Thr	
				245					250					255		

Asp Leu Asp Glu Glu Asn Ala Lys Gln Phe Tyr Leu Glu Asn Ala Thr  
 260 265 270  
 Ala Val Ala Glu Asn Arg Tyr Arg Asn Ser Asn Ser Glu Lys Ser Gly  
 275 280 285  
 His Val Asp Val Phe Ser Asn Thr Ser Ser Asp Ile Ser Asp Phe Asp  
 290 295 300  
 Ser Asp Gly Ser Gln Val Leu Pro Pro Glu Leu Thr Thr Glu Gly His  
 305 310 315 320  
 Ala Leu Gly Thr Val Val Ser Glu Ala Cys Gly Leu Ser Ser Val Tyr  
 325 330 335  
 Pro Lys Glu Lys Tyr Pro Asp Ser Arg Ile Asp Ala Tyr Leu Phe Thr  
 340 345 350  
 Pro Cys Gly Phe Ser Ala Asn Gly Val Ile Pro Pro Pro Glu Gly Lys  
 355 360 365  
 Ala Gly Thr His Tyr Phe Thr Val His Val Thr Pro Glu Pro His Cys  
 370 375 380  
 Ser Tyr Ala Ser Phe Glu Thr Asn Val Pro His Ser Gln Asn Gly Gln  
 385 390 395 400  
 Thr Thr Ala Gly Ile Ile Lys Gln Val Val Asp Ile Phe Lys Pro Gly  
 405 410 415  
 Arg Phe Ser Val Thr Leu Phe Glu Ala Lys Pro Ala Leu Ser Gln Val  
 420 425 430  
 Glu Asp Glu Trp Lys Glu Ala Lys Tyr Leu Ala Ala Arg Arg Thr Ala  
 435 440 445  
 Lys Met Glu His Val Glu Gly Tyr Arg Arg Val Asp Arg Ile Val His  
 450 455 460  
 Asp Leu Asp Gly Tyr Glu Leu Val Phe Arg Tyr Tyr Glu Arg Leu Asp  
 465 470 475 480  
 Trp Lys Gly Gly Ala Pro Arg Leu Gly Glu Glu Arg Ser  
 485 490

&lt;210&gt; 28

&lt;211&gt; 637

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 28

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 agccccaaaa gagtatcatt tctgacgaaa tgggtttttc ttcaatagac agtcaagagg 120  
 tccgccaagg tcatcatcga gcgctactac cccaagttga cgctcgactt tgagaccaac 180  
 aagcgtcttt gcgatgagat cgctatcatt gcctccaagc gccttcgcaa caaggtgggc 240  
 aatccatcac tgagccgtac aacagtcgga atttgacttg ctgacgaaaa ctagattgct 300  
 ggttacacca cccaccttat gaagcgtatc cagcgtggcc ctgtccgcgg tatctctttc 360

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aagctgcagg aggaggagcg tgagcgcaag gatcagtaag ttcctgaggt ttccgctctg 420
gatgtttccc agaccgagtc cggccagctc gatgtcgatg ccgacaccaa ggaccttctc 480
aagtcctatgg gcgtaagttc tgttctcaac gcggttggtc gtgggttttaa agcagtcctg 540
taacttatat tgcccactac agttcgacaa tctcaagggtc aacgttgtca acgtctccca 600
acatcagggtt caggagcgcc cccgccgctt ccggtag 637

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<210> 29

<211> 417

<212> DNA

<213> *Aspergillus fumigatus*

<400> 29

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taccccaagt tgacgctcga ctttgagacc aacaagcgtc tttgcatga gatcgctatc 120
attgcctcca agcgccttcg caacaagatt gctggttaca ccacccacct tatgaagcgt 180
atccagcgtg gccctgtccg cggatatctt ttcaagctgc aggaggagga gcgtgagcgc 240
aaggatcagt acgttcctga gggttcctgc ctggatgttt ccagaccga gtccggccag 300
ctcgatgtcg atgccgacac caaggacctt ctcaagtcca tgggcttcga caatctcaag 360
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<210> 30

<211> 139

<212> PRT

<213> *Aspergillus fumigatus*

<400> 30

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Met Gly Arg Val Arg Thr Lys Thr Val Lys Arg Ser Ala Lys Val Ile
  1              5              10              15

Ile Glu Arg Tyr Tyr Pro Lys Leu Thr Leu Asp Phe Glu Thr Asn Lys
      20              25              30

Arg Leu Cys Asp Glu Ile Ala Ile Ile Ala Ser Lys Arg Leu Arg Asn
      35              40              45

Lys Ile Ala Gly Tyr Thr Thr His Leu Met Lys Arg Ile Gln Arg Gly
      50              55              60

Pro Val Arg Gly Ile Ser Phe Lys Leu Gln Glu Glu Glu Arg Glu Arg
      65              70              75              80

Lys Asp Gln Tyr Val Pro Glu Val Ser Ala Leu Asp Val Ser Gln Thr
      85              90              95

Glu Ser Gly Gln Leu Asp Val Asp Ala Asp Thr Lys Asp Leu Leu Lys
      100              105              110

Ser Met Gly Phe Asp Asn Leu Lys Val Asn Val Val Asn Val Ser Gln
      115              120              125

His Gln Val Gln Glu Arg Pro Arg Arg Phe Arg
      130              135

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<210> 31  
 <211> 1035  
 <212> DNA  
 <213> *Aspergillus fumigatus*

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 gcaagaaggg tgtaagaag aggaccgttg atcctttctc caggaaggac gaataactctg 180  
 ttaaggtatg tcgacgtgga ctgtgtaagt cgaccgcagc taatctatat caggcgcctt 240  
 ccactttcca gatcagagag tatgttgac gcatatgatg tcgaatgcag gataaaggcg 300  
 attcacaatg gtagtggaga ttatgctgac tgaattatag tgtcgggaag actctgggtca 360  
 accgcaccag tgggtctcaag aacgccaatg actccctgaa gggtcgaatt ttcgagggtct 420  
 cgctggctga cctgcagaat gatgaagacc atgctttccg caagggttaag cttcgtgtgg 480  
 acgagggttca gggcaagaac tgtttgacca acttccacgg tcttgatttc acaaccgaca 540  
 aattgcgac cctcgtgcgc aagtggcagt cgctgatcga agccatgtca ctgtgaagac 600  
 gaccgatgat tatctccttc ggctttttgc tatcgcttc accaagagac gcccgaacca 660  
 gattaagaag accacatatg ctcgttcttc tcaaattccg gccatccgca agaagatgat 720  
 tgaaatcatg cagagggagg cagccagctg ctctctcgct cagctcactc acaagctcat 780  
 tcctgaggtc attggtcgtg agatcgagaa ggctaccag ggaatctatc ctttgagaa 840  
 tgtgtgtgac cctgttattc ttactcggga tgaagactaa ctgcaatcta ggtccatatt 900  
 cgcaagggtca agcttcttaa ggctcccaag ttcgacctgg gtgcactgct gaatctgcac 960  
 ggtgaatcta caaccgatga taagggccac aaggtcgaga gagagttcaa ggagcagggt 1020  
 ctcgaaagcg tttaa 1035

<210> 32  
 <211> 768  
 <212> DNA  
 <213> *Aspergillus fumigatus*

<400> 32  
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 gttgatcctt tctccaggaa ggacgaatac tctgttaagg cgcttccac tttccagatc 120  
 agagatgtcg ggaagactct ggtcaaccgc accagtgggtc tcaagaacgc caatgactcc 180  
 ctgaagggtc gaattttcga ggtctcgctg gctgacctgc agaattgatga agaccatgct 240  
 ttccgcaagg ttaagcttcg tgtggacgag gttcagggtc agaactgttt gaccaacttc 300  
 cacggtcctg atttcacaac cgacaaattg cgatccctcg tgcgcaagtg gcagtcgctg 360  
 atcgaagcca atgtcactgt gaagacgacc gatgattatc tccttcgggt ttttgctatc 420  
 gccttcacca agagacgccc gaaccagatt aagaagacca catatgctcg ttcttctcaa 480  
 atccgtgcca tccgcaagaa gatgattgaa atcatgcaga gggaggcagc cagctgctct 540  
 ctcgctcagc tcaactcaca gctcattcct gaggtcattg gtcgtgagat cgagaaggct 600  
 acccagggtg tctatccttt gcagaatgtc catattcgca aggtcaagct tcttaaggct 660  
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 ggccacaagg tcgagagaga gttcaaggag caggttctcg aaagcgtt 768

<210> 33  
 <211> 256  
 <212> PRT  
 <213> *Aspergillus fumigatus*

<400> 33  
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 Lys Lys Arg Thr Val Asp Pro Phe Ser Arg Lys Asp Glu Tyr Ser Val  
 20 25 30

Lys Ala Pro Ser Thr Phe Gln Ile Arg Asp Val Gly Lys Thr Leu Val  
 35 40 45  
 Asn Arg Thr Ser Gly Leu Lys Asn Ala Asn Asp Ser Leu Lys Gly Arg  
 50 55 60  
 Ile Phe Glu Val Ser Leu Ala Asp Leu Gln Asn Asp Glu Asp His Ala  
 65 70 75 80  
 Phe Arg Lys Val Lys Leu Arg Val Asp Glu Val Gln Gly Lys Asn Cys  
 85 90 95  
 Leu Thr Asn Phe His Gly Leu Asp Phe Thr Thr Asp Lys Leu Arg Ser  
 100 105 110  
 Leu Val Arg Lys Trp Gln Ser Leu Ile Glu Ala Asn Val Thr Val Lys  
 115 120 125  
 Thr Thr Asp Asp Tyr Leu Leu Arg Leu Phe Ala Ile Ala Phe Thr Lys  
 130 135 140  
 Arg Arg Pro Asn Gln Ile Lys Lys Thr Thr Tyr Ala Arg Ser Ser Gln  
 145 150 155 160  
 Ile Arg Ala Ile Arg Lys Lys Met Ile Glu Ile Met Gln Arg Glu Ala  
 165 170 175  
 Ala Ser Cys Ser Leu Ala Gln Leu Thr His Lys Leu Ile Pro Glu Val  
 180 185 190  
 Ile Gly Arg Glu Ile Glu Lys Ala Thr Gln Gly Ile Tyr Pro Leu Gln  
 195 200 205  
 Asn Val His Ile Arg Lys Val Lys Leu Leu Lys Ala Pro Lys Phe Asp  
 210 215 220  
 Leu Gly Ala Leu Leu Asn Leu His Gly Glu Ser Thr Thr Asp Asp Lys  
 225 230 235 240  
 Gly His Lys Val Glu Arg Glu Phe Lys Glu Gln Val Leu Glu Ser Val  
 245 250 255

<210> 34  
 <211> 614  
 <212> DNA  
 <213> *Aspergillus fumigatus*

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 cttctggcgg aacggctcctg tgttgggaaa ttgacggcta tcaatagcgc ctgctaaacg 180  
 ggttatgtcc ctcaaagaac cgacgttgaa aatgtccaag tcccatgccg acagacgctc 240  
 aaggatcatt cttacggatt cgcccgcaga aatctccaaa aagatcaatg ctgcgctcac 300

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agactcggaa ttaaccatta catatgaccc agtccgtcga cctggagtgg cgaatttaat 360
agagatcttg agtcacttcg atggacgaac ttgcatgag attgccatgg aataccgttc 420
agccagtctt cgcgctctaa aggaacatct ggccagaacg ttgtccaatc atcttgagcc 480
aataagagag aagtatctct cacttgtagg agatcagact gactaccttg attctatagc 540
agaacagggt tctgaagccg cgcgggccaa cgctgaattg acaatggagc aagtcaaagt 600
cgctatgggc ttaa                                     614

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&lt;210&gt; 35

&lt;211&gt; 552

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 35

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gttatgtccc tcaaagaacc gacgttgaaa atgtccaagt cccatgccga cagacgtcga 180
aggatcattc ttacggattc gcccgagaaa atctccaaaa agatcaatgc tgcgctcaca 240
gactcggaat taaccattac atatgaccca gtccgtcgac ctggagtggc gaatttaata 300
gagatcttga gtcacttcga tggacgaact tgcgatgaga ttgccatgga ataccgttca 360
gccagtcttc gcgctctaaa ggaacatctg gccagaacgt tgtccaatca tcttgagcca 420
ataagagaga agtatctctc acttgtagga gatcagactg actaccttga ttctatagca 480
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gctatgggct ta                                     552

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&lt;210&gt; 36

&lt;211&gt; 184

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 36

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Pro Val Gly Asp Asp Gln Arg Gln His Leu Glu Phe Ser Arg Asn Thr
  1              5              10              15

Ala Asn Ser Phe Asn His Val Tyr Gly Pro Ile Phe Pro Ser Pro Glu
      20              25              30

Ala Ile Ile Ser Pro Ala Lys Arg Val Met Ser Leu Lys Glu Pro Thr
      35              40              45

Leu Lys Met Ser Lys Ser His Ala Asp Arg Arg Ser Arg Ile Ile Leu
      50              55              60

Thr Asp Ser Pro Ala Glu Ile Ser Lys Lys Ile Asn Ala Ala Leu Thr
      65              70              75              80

Asp Ser Glu Leu Thr Ile Thr Tyr Asp Pro Val Arg Arg Pro Gly Val
      85              90              95

Ala Asn Leu Ile Glu Ile Leu Ser His Phe Asp Gly Arg Thr Cys Asp
      100              105              110

Glu Ile Ala Met Glu Tyr Arg Ser Ala Ser Leu Arg Ala Leu Lys Glu
      115              120              125

His Leu Ala Arg Thr Leu Ser Asn His Leu Glu Pro Ile Arg Glu Lys
      130              135              140

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Tyr Leu Ser Leu Val Gly Asp Gln Thr Asp Tyr Leu Asp Ser Ile Ala  
 145 150 155 160

Glu Gln Gly Ser Glu Ala Ala Arg Ala Asn Ala Glu Leu Thr Met Glu  
 165 170 175

Gln Val Lys Val Ala Met Gly Leu  
 180

<210> 37  
 <211> 819  
 <212> DNA  
 <213> *Aspergillus fumigatus*

<400> 37  
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 actcaggtac ggaactcgaa actacgctat aatgaggctt tactcgtgat ttggatgttg 120  
 acaataatgt tcctagaccg agagtctgtt tcacacctat gcgcagtatg catcgatgac 180  
 gaagctgcct ccgaaaccct cagaagaaga acaacggatt gaatcgcaac tgaaggatct 240  
 tcttgaaaag gtgtgcactt tgaggccctc tagtccagcc caacagacga tcatgctgac 300  
 acgatccgat catagcgtga agccctcatc tcccgctctt cccgtctcct tgactccgaa 360  
 gccactctta ccgcatctgc cctgaaacag agcaatcttg ccgcaatcg cgaagtcctc 420  
 caggatcatc gccgcgaatt gcagcgcttg aacgcccga tgcgcgagtc ccgcgaccga 480  
 gccaatcttc tgtctaactg ccgctccgac attgatgcct accgcaattc aaaccccgc 540  
 gcggctgagg cagactacat gctcgaggag cggggtcgta tagatgaaag ccataacatg 600  
 atagatgggtg tcctaagcca ggcgtatgca atcaacgaga gttttgggct acaacgtgaa 660  
 accctggcca gcatcaatcg ccgtatcgtc ggtgctgcca ataaggtacc aggaatgaat 720  
 gcattgattg gtaagattgg gacgaagagg agacgtgacg caatcatctt gggggccttc 780  
 atcggctttt gtttcttgat ggtgttcttc ttccgatga 819

<210> 38  
 <211> 681  
 <212> DNA  
 <213> *Aspergillus fumigatus*

<400> 38  
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 actcagaccg agagtctgtt tcacacctat gcgcagtatg catcgatgac gaagctgcct 120  
 ccgaaaccct cagaagaaga acaacggatt gaatcgcaac tgaaggatct tcttgaaaag 180  
 cgtgaagccc tcatctccca gctctcccg tctcttgact ccgaagccac tcttaccgca 240  
 tctgccctga aacagagcaa tcttgcccgc aatcgcgagg tctccagga tcatcgccgc 300  
 gaattgcagc gcctgaacgc cgcaatcgcc gagtcccgcg accgagccaa tcttctgtct 360  
 aacgtccgct ccgacattga tgcctaccgc aattcaaacc ccgccgcggc tgaggcagac 420  
 tacatgctcg aggagcgggg tcgtatagat gaaagccata acatgataga tgggtgtccta 480  
 agccaggcgt atgcaatcaa cgagagtttt gggctacaac gtgaaaccct ggccagcatc 540  
 aatcgccgta tcgtcggtgc tgccaataag gtaccaggaa tgaatgcatt gattggtaag 600  
 attgggacga agaggagacg tgacgcaatc atcttggggg ctttcatcgg cttttgtttc 660  
 ttgatggtgt tcttcttcg a 681

<210> 39  
 <211> 227  
 <212> PRT  
 <213> *Aspergillus fumigatus*

&lt;400&gt; 39

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 1 5 10 15

Arg Ser Leu Glu Thr Gln Thr Glu Ser Leu Phe His Thr Tyr Ala Gln  
 20 25 30

Tyr Ala Ser Met Thr Lys Leu Pro Pro Lys Pro Ser Glu Glu Glu Gln  
 35 40 45

Arg Ile Glu Ser Gln Leu Lys Asp Leu Leu Glu Lys Arg Glu Ala Leu  
 50 55 60

Ile Ser Gln Leu Ser Arg Leu Leu Asp Ser Glu Ala Thr Leu Thr Ala  
 65 70 75 80

Ser Ala Leu Lys Gln Ser Asn Leu Ala Arg Asn Arg Glu Val Leu Gln  
 85 90 95

Asp His Arg Arg Glu Leu Gln Arg Leu Asn Ala Ala Ile Ala Glu Ser  
 100 105 110

Arg Asp Arg Ala Asn Leu Leu Ser Asn Val Arg Ser Asp Ile Asp Ala  
 115 120 125

Tyr Arg Asn Ser Asn Pro Ala Ala Ala Glu Ala Asp Tyr Met Leu Glu  
 130 135 140

Glu Arg Gly Arg Ile Asp Glu Ser His Asn Met Ile Asp Gly Val Leu  
 145 150 155 160

Ser Gln Ala Tyr Ala Ile Asn Glu Ser Phe Gly Leu Gln Arg Glu Thr  
 165 170 175

Leu Ala Ser Ile Asn Arg Arg Ile Val Gly Ala Ala Asn Lys Val Pro  
 180 185 190

Gly Met Asn Ala Leu Ile Gly Lys Ile Gly Thr Lys Arg Arg Arg Asp  
 195 200 205

Ala Ile Ile Leu Gly Ala Phe Ile Gly Phe Cys Phe Leu Met Val Phe  
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Phe Phe Arg  
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&lt;210&gt; 40

&lt;211&gt; 1601

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 40

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 ctttccgacc atacagaagt cgtccgagag aagggtccagg atggactgac aggggaaact 180  
 aaggagattt cgtactcaca atgtaaaatc gtcggcaatg gatcgtttgg tgtcgtcttt 240  
 cagacgaaaa tgatgccaag cggcgaggat gctgccatta agaggggtcct tcaagacaag 300

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acatcgtaga attgaaagcc ttctattact cgaacggcga gaggggatgc gactctcctt 480
tgtctcccca ttcgttctag tttgccgttt gctgactacc ctaccattgt ctttcacaga 540
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<210> 41

<211> 1182

<212> DNA

<213> *Aspergillus fumigatus*

<400> 41

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tccacggggt gtgtgatggc tgaactcatg cttggtcagc cattgttccc tggagagtcg 720
ggaattgacc aactggtgga aatcatcaag gttcttggaa cccctactcg ggagcagatc 780
cgcaccatga acccaaaacta tatggagcac aaattccctc aaatcaagcc acaccattc 840
aacaaggttt tccggagagc tcctcacgag gccattgatc tgatctcagc tttgctagaa 900
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cggctgggtt cccctcatgc acgcgccgct ctcgaggccc gggggctaga cattgacaac 1140
ttcactcctc tcacgaagga ggagatgatg gcacgtctcg ac 1182

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<210> 42

<211> 394

<212> PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 42

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Val	Val	Arg	Glu	Lys	Val	Gln	Asp	Gly	Leu	Thr	Gly	Glu	Thr	Lys	Glu
			20					25					30		
Ile	Ser	Tyr	Ser	Gln	Cys	Lys	Ile	Val	Gly	Asn	Gly	Ser	Phe	Gly	Val
		35					40					45			
Val	Phe	Gln	Thr	Lys	Met	Met	Pro	Ser	Gly	Glu	Asp	Ala	Ala	Ile	Lys
	50					55					60				
Arg	Val	Leu	Gln	Asp	Lys	Arg	Phe	Lys	Asn	Arg	Glu	Leu	Gln	Ile	Met
65					70				75						80
Arg	Ile	Val	Arg	His	Pro	Asn	Ile	Val	Glu	Leu	Lys	Ala	Phe	Tyr	Tyr
				85					90					95	
Ser	Asn	Gly	Glu	Arg	Lys	Asp	Glu	Val	Tyr	Leu	Asn	Leu	Val	Leu	Glu
			100					105					110		
Tyr	Val	Pro	Glu	Thr	Val	Tyr	Arg	Ala	Ser	Arg	Tyr	Phe	Asn	Lys	Leu
		115					120					125			
Lys	Thr	Thr	Met	Pro	Met	Leu	Glu	Val	Lys	Leu	Tyr	Ile	Tyr	Gln	Leu
		130				135					140				
Phe	Arg	Ser	Leu	Ala	Tyr	Ile	His	Ser	Gln	Gly	Ile	Cys	His	Arg	Asp
145					150					155					160
Ile	Lys	Pro	Gln	Asn	Leu	Leu	Leu	Asp	Pro	Ser	Thr	Gly	Ile	Leu	Lys
				165				170						175	
Leu	Cys	Asp	Phe	Gly	Ser	Ala	Lys	Ile	Leu	Val	Glu	Asn	Glu	Pro	Asn
			180				185						190		
Val	Ser	Tyr	Ile	Cys	Ser	Arg	Tyr	Tyr	Arg	Ala	Pro	Glu	Leu	Ile	Phe
		195					200					205			
Gly	Ala	Thr	Asn	Tyr	Thr	Thr	Lys	Ile	Asp	Val	Trp	Ser	Thr	Gly	Cys
		210				215					220				
Val	Met	Ala	Glu	Leu	Met	Leu	Gly	Gln	Pro	Leu	Phe	Pro	Gly	Glu	Ser
225					230					235					240
Gly	Ile	Asp	Gln	Leu	Val	Glu	Ile	Ile	Lys	Val	Leu	Gly	Thr	Pro	Thr
				245					250					255	
Arg	Glu	Gln	Ile	Arg	Thr	Met	Asn	Pro	Asn	Tyr	Met	Glu	His	Lys	Phe
			260				265						270		
Pro	Gln	Ile	Lys	Pro	His	Pro	Phe	Asn	Lys	Val	Phe	Arg	Arg	Ala	Pro
		275					280					285			
His	Glu	Ala	Ile	Asp	Leu	Ile	Ser	Ala	Leu	Leu	Glu	Tyr	Thr	Pro	Thr
		290				295					300				

Gln Arg Leu Ser Ala Ile Glu Ala Met Cys His Pro Phe Phe Asp Glu  
 305 310 315 320  
 Leu Arg Asp Pro Asn Thr Arg Leu Pro Asp Ser Arg His Pro Gly Gly  
 325 330 335  
 Ala Ala Arg Asp Leu Pro Asn Leu Phe Asp Phe Ser Arg His Glu Leu  
 340 345 350  
 Ser Ile Ala Pro Ala Leu Asn Ser Arg Leu Val Pro Pro His Ala Arg  
 355 360 365  
 Ala Ala Leu Glu Ala Arg Gly Leu Asp Ile Asp Asn Phe Thr Pro Leu  
 370 375 380  
 Thr Lys Glu Glu Met Met Ala Arg Leu Asp  
 385 390

&lt;210&gt; 43

&lt;211&gt; 2209

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 43

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ttcagagtcag ttacttcagg gtgtttttatt aaatcaatgt ggaagtcttt taaagaaaag 180
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&lt;210&gt; 44

&lt;211&gt; 2209

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 44

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&lt;210&gt; 45

&lt;211&gt; 735

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 45

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Pro	Arg	Gln	Ser	Thr	Ala	Phe	Leu	His	Leu	Thr	Thr	Tyr	Asn	Leu	Arg	20	25	30	
Gln	His	Gly	Asn	Trp	Leu	Tyr	Leu	Phe	Glu	Ser	Val	Thr	Ser	Gly	Cys	35	40	45	
Phe	Ile	Lys	Ser	Met	Trp	Lys	Ser	Phe	Lys	Glu	Lys	His	Ala	Ser	Lys	50	55	60	
Phe	Gly	Gly	Gly	Ser	Ala	Glu	Ala	Ala	Ala	Ser	Asp	Gly	Gly	Gln	Asp	65	70	75	80
Leu	Thr	Thr	Ile	Leu	Asp	Arg	Ser	Gln	Arg	Gly	Glu	Leu	Thr	Val	Leu	85	90	95	
Val	Ala	Leu	Ile	Ala	Gln	Arg	Met	Arg	Asp	Gly	Ile	Glu	Gln	Asn	Phe	100	105	110	
Ser	Asn	Ala	Pro	Pro	Ser	Ser	Gly	Gln	Ser	Val	Asn	Tyr	Glu	Glu	Lys	115	120	125	
Arg	Thr	Gly	Ser	Leu	Pro	Gln	Ser	Thr	Asp	Ala	Gln	Glu	Asp	Gln	Ser	130	135	140	
Ser	Ser	Gly	Ser	Ala	Ala	Asn	Gly	Ser	Arg	Thr	Asp	Pro	Gln	Phe	Lys	145	150	155	160
Asp	Pro	Glu	Thr	Ala	Thr	Cys	Ala	Leu	Ser	Lys	Tyr	Asp	Asp	Trp	Arg	165	170	175	
Asp	Ser	Val	Leu	Leu	Arg	Ile	Gly	Glu	Val	Val	Asn	Arg	Asp	Pro	Glu	180	185	190	
His	Gly	Glu	Val	Gln	Ala	Asn	Glu	Asn	Pro	Pro	Ser	Gly	Gln	Gln	Ser	195	200	205	
Gln	Gln	Ile	Arg	Ser	Glu	Glu	Asp	Asp	Arg	Ser	Ile	Arg	Lys	Leu	Arg	210	215	220	
Glu	Val	Phe	Pro	Pro	Val	Glu	Thr	Ser	Leu	Ser	Gln	Leu	Pro	Glu	Ala	225	230	235	240
Lys	Lys	Leu	Leu	Ile	Leu	His	Ser	Leu	Leu	Leu	Leu	Val	Leu	Ser	Leu	245	250	255	
Glu	His	Tyr	Asn	Ala	Trp	Ser	Arg	Val	Leu	Met	Leu	Phe	Val	Thr	Ser	260	265	270	
Ser	Leu	Gly	Leu	Asp	Val	Lys	Leu	Leu	Asn	Glu	Asp	Glu	Val	Lys	Val	275	280	285	
Ala	Arg	Gly	Leu	Leu	Asp	Thr	Ala	Leu	Ala	Leu	Ser	Ser	Asn	Ala	Pro	290	295	300	

Arg	Gln	Asp	Glu	Ser	Arg	Ser	Arg	Asp	Ser	Ser	Arg	Lys	Trp	Lys	Val	305	310	315	320
Gly	Ile	Ala	Ser	Val	Ala	Gly	Ala	Ala	Leu	Ile	Gly	Ile	Thr	Gly	Gly	325	330	335	
Leu	Ala	Ala	Pro	Leu	Val	Ala	Ala	Gly	Leu	Gly	Thr	Val	Met	Gly	Gly	340	345	350	
Leu	Gly	Leu	Gly	Ala	Thr	Ala	Ala	Ala	Gly	Tyr	Leu	Gly	Ala	Leu	Ala	355	360	365	
Gly	Ser	Gly	Val	Val	Val	Gly	Gly	Leu	Phe	Gly	Ala	Tyr	Gly	Gly	Arg	370	375	380	
Met	Thr	Gly	Arg	Met	Val	Asp	Lys	Tyr	Ala	Arg	Glu	Val	Asp	Asp	Phe	385	390	395	400
Ala	Phe	Leu	Pro	Ile	Arg	Gly	Ser	Arg	His	Arg	Ser	Glu	Asp	Glu	Arg	405	410	415	
Glu	Ala	Ala	His	Gln	Asp	His	Arg	Leu	Arg	Val	Thr	Ile	Gly	Val	Thr	420	425	430	
Gly	Trp	Leu	Thr	Glu	Glu	Asp	Asn	Phe	Val	Ile	Pro	Trp	Arg	Val	Ile	435	440	445	
Gly	Ala	Glu	Ser	Glu	Val	Phe	Gly	Leu	Arg	Trp	Glu	Thr	Glu	Pro	Leu	450	455	460	
Met	Asn	Leu	Gly	Asn	Ala	Leu	Asp	Leu	Leu	Val	Thr	Ser	Ala	Ala	Trp	465	470	475	480
Thr	Ala	Gly	Glu	Gln	Val	Leu	Lys	Lys	Thr	Phe	Leu	Ser	Gln	Leu	Leu	485	490	495	
Thr	Ala	Val	Ala	Leu	Pro	Leu	Gly	Leu	Leu	Lys	Val	Ala	Arg	Val	Val	500	505	510	
Asp	Asn	Pro	Phe	Ser	Val	Ala	Lys	Ala	Arg	Ala	Asp	Lys	Ala	Gly	Glu	515	520	525	
Val	Leu	Ala	Asp	Ala	Leu	Ile	Ser	Lys	Val	Gln	Gly	Glu	Arg	Pro	Val	530	535	540	
Thr	Leu	Ile	Gly	Tyr	Ser	Leu	Gly	Ser	Arg	Val	Ile	Phe	Ala	Cys	Leu	545	550	555	560
Gln	Ser	Leu	Ala	Lys	Arg	Arg	Ala	Phe	Gly	Leu	Val	Glu	Ser	Ala	Ile	565	570	575	
Leu	Met	Gly	Ala	Pro	Thr	Pro	Ser	Asn	Ser	Glu	Gln	Trp	Cys	Arg	Ile	580	585	590	
Arg	Ser	Val	Val	Ser	Gly	Arg	Leu	Val	Asn	Val	Tyr	Ser	Glu	Asn	Asp	595	600	605	



Ser Val Leu Ala Leu Leu Tyr Arg Thr Ser Ser Leu Gln Leu Gly Val  
 610 615 620  
 Ala Gly Leu Gln Pro Val Glu Gly Val Ser Gly Val Glu Asn Leu Asp  
 625 630 635 640  
 Val Ser Asp Leu Ile Ser Gly His Leu Arg Tyr Gln Phe Leu Val Gly  
 645 650 655  
 Arg Ile Leu Ser Val Val Gly Leu Glu Ser Ile Asp Ala Arg Glu Val  
 660 665 670  
 Ala Leu Glu Glu Ala Ala Leu Glu Ala Lys Asp Arg Arg Gln Glu Gln  
 675 680 685  
 Glu Arg Ala His Asn Glu Arg Gln Ala Gly Phe Met Gly Glu Gly Arg  
 690 695 700  
 Ser Pro Ser Gln Arg Leu Glu Ser Gln Glu Asp Leu Gln Gly Glu Glu  
 705 710 715 720  
 Asp Arg Leu Gln Lys Glu Met Gly Lys Ala Arg Val Arg His Ser  
 725 730 735

&lt;210&gt; 46

&lt;211&gt; 510

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 46

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aagcgtgtac gtttttcaac ggagaaattc tgagcgcagg acggaaagat catggtcgga 180
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aggaagaacc ttaccgactt cgagcgcttc aaggtcctca gactcaagaa gcaggtacgt 480
tcagtttgcg aaactatggg agaattgtga 510
  
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&lt;210&gt; 47

&lt;211&gt; 423

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 47

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aagcgtgtcc tgggtgacgg tccttcacc gaggaagaac agatcggttc ccgtcacgct 180
cttctctctg ctacgccac tctcaccctt ttcgtcattc ccaaactccc ccgcgctgcc 240
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agcaccattg ctcaagaagc tgagcgcgct gagcggagga agaaccttac cgacttcgag 360
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ttg 423
  
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<210> 48  
 <211> 141  
 <212> PRT  
 <213> *Aspergillus fumigatus*

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                   20                  25                  30  
 Ala Ile Val Glu Ile Ile Asp His Lys Arg Val Leu Val Asp Gly Pro  
                   35                  40                  45  
 Ser Thr Glu Glu Asn Lys Ile Val Pro Arg His Ala Leu Pro Leu Ala  
           50                  55                  60  
 His Ala Thr Leu Thr Pro Phe Val Ile Pro Lys Leu Pro Arg Ala Ala  
           65                  70                  75                  80  
 Gly Thr Gly Pro Val Lys Lys Leu Trp Glu Lys Asn Glu Ile Asp Gly  
                   85                  90                  95  
 Lys Trp Ala Lys Ser Thr Ile Ala Gln Lys Thr Glu Arg Ala Glu Arg  
                   100                  105                  110  
 Arg Lys Asn Leu Thr Asp Phe Glu Arg Phe Lys Val Leu Arg Leu Lys  
           115                  120                  125  
 Lys Gln Val Arg Ser Val Cys Glu Thr Met Gly Glu Leu  
           130                  135                  140

<210> 49  
 <211> 1413  
 <212> DNA  
 <213> *Aspergillus fumigatus*

<400> 49  
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 gcgggcgcgc tgtcgcgctc acacagtacc cccaatattc gtgctccacc acgggtagct 660  
 cgctgaacga gtttgtggaaa tggagaacca ggcttgaggg taagcgtgca aatggcaaca 720  
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 ccatatcctg ctgaagttgc tgcaactgtg catgctgtca tgcaaagatt gaatttcagc 1020  
 aatccttacc gactgtgtcg gcagtcctcaa gtgggaccgt cagcttggct tggagcccaa 1080

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gaagcaaaact ccccgaggagt caagagagcc gagagtttga atggtaaccc catttttcatt 1260
caggcattag cagacattgc ccaagagcac ctccgtaagg gagagaagtg ctcactacag 1320
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gctggcgacc gattttcttc tcttgtagtt tag 1413

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&lt;210&gt; 50

&lt;211&gt; 1284

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 50

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gcaacagcag ttcccccggt cactcaaaat gcggctgggt ccaaaggccc cagggcaatg 180
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ttatttgccg atggcgatct gattcctctc ggacgacttc aatcatacct cggccctctc 300
atcgctaagc gcagaacccc aaagatccaa cggcaatact cggatattgg tggagggtca 360
ccgatcagga aatgggtccga gtatcagtgc gaggaaatgt gcagattgct agacaaaatc 420
aatcccgaaa cggtcctca caagccttac gtcgcttcc ggtacgccga ccctctgacg 480
gaagaaatgt acacaaagtt gctggaagat ggattcggca acgggaaagg cgggcgcgct 540
gtcgcgttca cacagtacc ccaatattcg tgctccacca cggttagctc gctgaacgag 600
ttgtggaaat ggagaaccag gcttgagggt aagcgtgcaa atggcaacat ggaccccgct 660
ggtgccatcc agtggagtgt cattgatcga tggccaacgc accctggcct cgtggaggct 720
ttcggccgga acattgagga gcagctgaag acataccagc aggagaagcg aaacggtgtc 780
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ttcaccagcg accatattga gactctgtac gagttggatc tggaagtgat aaaggaagca 1080
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&lt;210&gt; 51

&lt;211&gt; 428

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 51

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Met Ala Leu Arg Arg Pro Leu Thr Leu Pro Arg His Ile Leu Asn Gly
  1                      5                      10                      15

Ala Cys Leu Gly Leu Arg Pro Ala Val Ser Arg Ala Ala Leu Ala Tyr
      20                      25                      30

Gly Gln Glu Gln Arg Lys Gly Leu Ala Thr Ala Val Pro Pro Val Thr
      35                      40                      45

Gln Asn Ala Ala Gly Ser Lys Gly Pro Thr Ala Met Val Phe Leu Asn
      50                      55                      60

Met Gly Gly Pro Ser Lys Ile Asp Glu Val Glu Asp Phe Leu Ser Arg
      65                      70                      75                      80

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Leu	Phe	Ala	Asp	Gly	Asp	Leu	Ile	Pro	Leu	Gly	Arg	Leu	Gln	Ser	Tyr	85	90	95	
Leu	Gly	Pro	Leu	Ile	Ala	Lys	Arg	Arg	Thr	Pro	Lys	Ile	Gln	Arg	Gln	100	105	110	
Tyr	Ser	Asp	Ile	Gly	Gly	Gly	Ser	Pro	Ile	Arg	Lys	Trp	Ser	Glu	Tyr	115	120	125	
Gln	Cys	Glu	Glu	Met	Cys	Arg	Leu	Leu	Asp	Lys	Ile	Asn	Pro	Glu	Thr	130	135	140	
Ala	Pro	His	Lys	Pro	Tyr	Val	Ala	Phe	Arg	Tyr	Ala	Asp	Pro	Leu	Thr	145	150	155	160
Glu	Glu	Met	Tyr	Thr	Lys	Leu	Leu	Glu	Asp	Gly	Phe	Gly	Asn	Gly	Lys	165	170	175	
Gly	Gly	Arg	Ala	Val	Ala	Phe	Thr	Gln	Tyr	Pro	Gln	Tyr	Ser	Cys	Ser	180	185	190	
Thr	Thr	Gly	Ser	Ser	Leu	Asn	Glu	Leu	Trp	Lys	Trp	Arg	Thr	Arg	Leu	195	200	205	
Glu	Gly	Lys	Arg	Ala	Asn	Gly	Asn	Met	Asp	Pro	Ala	Gly	Ala	Ile	Gln	210	215	220	
Trp	Ser	Val	Ile	Asp	Arg	Trp	Pro	Thr	His	Pro	Gly	Leu	Val	Glu	Ala	225	230	235	240
Phe	Ala	Arg	Asn	Ile	Glu	Glu	Gln	Leu	Lys	Thr	Tyr	Pro	Glu	Glu	Lys	245	250	255	
Arg	Asn	Gly	Val	Val	Leu	Leu	Phe	Ser	Ala	His	Ser	Leu	Pro	Met	Ser	260	265	270	
Val	Val	Asn	Arg	Gly	Asp	Pro	Tyr	Pro	Ala	Glu	Val	Ala	Ala	Thr	Val	275	280	285	
His	Ala	Val	Met	Gln	Arg	Leu	Asn	Phe	Ser	Asn	Pro	Tyr	Arg	Leu	Cys	290	295	300	
Trp	Gln	Ser	Gln	Val	Gly	Pro	Ser	Ala	Trp	Leu	Gly	Ala	Gln	Thr	Ser	305	310	315	320
Asp	Thr	Val	Glu	Asn	Tyr	Val	Lys	Arg	Gly	Gln	Thr	Asp	Ile	Ile	Leu	325	330	335	
Val	Pro	Ile	Ala	Phe	Thr	Ser	Asp	His	Ile	Glu	Thr	Leu	Tyr	Glu	Leu	340	345	350	
Asp	Leu	Glu	Val	Ile	Lys	Glu	Ala	Asn	Ser	Pro	Gly	Val	Lys	Arg	Ala	355	360	365	
Glu	Ser	Leu	Asn	Gly	Asn	Pro	Ile	Phe	Ile	Gln	Ala	Leu	Ala	Asp	Ile	370	375	380	

Ala Gln Glu His Leu Arg Lys Gly Glu Lys Cys Ser Leu Gln Met Thr  
 385 390 395 400

Leu Arg Cys Gln Gly Cys Lys Ser Glu Arg Cys Leu Glu Gln Lys Lys  
 405 410 415

Phe Phe Ala Gly Asp Arg Phe Ser Ser Leu Val Val  
 420 425

<210> 52  
 <211> 1536  
 <212> DNA  
 <213> *Aspergillus fumigatus*

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<210> 53  
 <211> 1536  
 <212> DNA  
 <213> *Aspergillus fumigatus*

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tttctcgccc tcacaaagcc tcgtctctcg ttcctgatcg tgttgacgac tacctccgct 540
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<210> 54

<211> 512

<212> PRT

<213> *Aspergillus fumigatus*

<400> 54

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      20                      25          30

Arg Pro Val Ala Val Arg Ser Phe Phe Ser Ser Ser Arg Leu Arg Ala
      35                      40          45

Gly Ile Ala Asp His Glu Ser Thr Pro Ser Thr Val Gln Lys Thr Tyr
      50                      55          60

Phe Ser Ala Asn Arg Thr Ala Asp Gly Leu Leu Ala Ser Leu Ser Ala
      65                      70          75          80

Val Asn Ser Ser Pro Arg Ser Ile Ala Asp Asn Ala Leu Ser Gln Gly
      85                      90          95

Ala Ala Ser Ser Glu Ser Ile Thr Ser Gln Ser Thr Ser Gln Glu Leu
      100                     105          110

Pro His Arg Arg Arg Lys Arg Leu Lys Glu Glu Ala Ala Lys Asn Asn
      115                     120          125

Ala Ala Glu Thr Glu Leu Pro Pro Asp Ala Ser Ser Gln Leu Ser Thr
      130                     135          140

Leu Ser Ser Ala Leu Pro Ala Thr Ser Leu Arg Arg Lys Leu Ala Ala
      145                     150          155          160

Phe Leu Ala Leu Thr Lys Pro Arg Leu Ser Phe Leu Ile Val Leu Thr
      165                     170          175

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Thr Thr Ser Ala Tyr Gly Met Tyr Pro Ile Ser Ser Leu Leu Thr Leu  
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 Thr Leu Asn Met Leu Leu Glu Pro Lys Tyr Asp Ala Leu Met Ser Arg  
 225 230 235 240  
 Thr Arg Asn Arg Pro Leu Val Arg Gly Leu Leu Ser Arg Arg Ala Ala  
 245 250 255  
 Val Leu Phe Ala Ile Ala Thr Ala Ala Ala Gly Leu Gly Leu Leu Tyr  
 260 265 270  
 Ile Gly Thr Asn Pro Thr Thr Thr Ala Leu Ser Ala Ser Asn Ile Cys  
 275 280 285  
 Leu Tyr Ala Phe Val Tyr Thr Pro Leu Lys Arg Ile Ser Val Ile Asn  
 290 295 300  
 Thr Trp Val Gly Ala Val Val Gly Gly Ile Pro Pro Leu Met Gly Trp  
 305 310 315 320  
 Thr Ala Ala Ala Gly Gln Thr Ala Thr Thr Gly His Asp Ser Trp Arg  
 325 330 335  
 Asp Met Leu Phe Ser Lys Asp Ser Ile Gly Gly Trp Leu Leu Gly Gly  
 340 345 350  
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 Tyr Lys Phe Trp Arg His Gln Gly Ala Asn Gly Ser Ala Arg Arg Leu  
 435 440 445  
 Phe Trp Ala Ser Ile Trp Gln Leu Pro Ile Leu Leu Val Gly Gly Leu  
 450 455 460  
 Val Thr Lys Lys Gly Leu Trp Asp Gly Val Trp Asn Asn Val Phe Gly  
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Gln Pro Val Glu Asp Glu Asp Asp Tyr Leu Trp Glu Asp Glu Asp Glu  
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Val Ala Glu Ala Glu Arg Lys Met Ile Pro Ala Lys Thr Ser Ser Ser  
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<210> 55  
 <211> 1626  
 <212> DNA  
 <213> *Aspergillus fumigatus*

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 gcaagtctca agcgctggga tgacagtga cggccgcga acgttagtat cctgacacgg 1560  
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<210> 56  
 <211> 1626  
 <212> DNA  
 <213> *Aspergillus fumigatus*

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<210> 57

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<212> PRT

<213> *Aspergillus fumigatus*

<400> 57

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Ala Pro Leu Phe Ser Thr Ala Pro Phe Arg Arg Gln Leu His Ala Ser
          35                      40                      45

Gly Val Arg Ser Ile Glu Pro Val Ile Phe Arg Asn Ser Leu Glu Lys
          50                      55                      60

Thr Leu Glu Ala His Arg Ser Ser Asn Arg Ala Ser Leu Ile Arg Lys
          65                      70                      75                      80

Val Ile Asn His Asp Cys Pro Ala Glu Thr Pro Pro Pro Ile Leu Pro
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Leu Glu Asn Arg Ala Gly His Asp Gln Ser Ser Gln Lys Ala Ser Ser
          100                      105                      110

Val Ser Asn Ala Glu Ser Glu Ser Pro Arg Ser Ser Ala Pro Ala Arg
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Arg Ala Gln Arg Lys Ala Arg Ser Pro Ser Gln Val Ala Thr Pro Gln
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Pro	Gln	Thr	Thr	Glu	Tyr	Pro	Gln	Leu	Gln	Trp	His	Ala	Asp	Glu	Thr	145	150	155	160
Lys	Gly	Arg	Pro	Ala	Gln	Ser	Pro	Trp	Leu	Lys	Tyr	Leu	Thr	Thr	Asp	165	170	175	
Trp	Lys	Thr	Pro	Asp	Ala	Val	Ser	Arg	Leu	Asp	Ala	Glu	Ile	Arg	Ala	180	185	190	
Leu	Glu	Leu	Tyr	Met	Thr	Pro	Thr	Pro	Ser	Glu	Arg	Thr	Glu	Ile	Asp	195	200	205	
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Ser	Gly	Leu	Asp	Phe	Val	Leu	Pro	Val	Pro	Asp	Ser	Asp	Arg	Ser	Thr	245	250	255	
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Glu	Gly	Leu	Pro	Ala	Ser	Val	Glu	Tyr	Ile	Met	Asp	Tyr	Gln	Ala	Glu	325	330	335	
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Ala	Arg	Gly	Arg	Tyr	Gly	Arg	Thr	Gln	Met	Ser	Ile	Glu	Ser	Asp	Ala	355	360	365	
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Gln	Arg	Pro	Asp	Cys	Leu	Gly	Glu	Gln	Leu	Ile	Ala	Phe	Leu	Arg	Ala	385	390	395	400
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Pro	Ser	Trp	Phe	Asn	Ala	Ser	Thr	Val	Lys	Arg	Ala	Ser	Ala	Leu	Tyr	420	425	430	
Ala	Pro	Asp	Asp	Leu	Pro	Ala	His	Leu	Arg	Gly	Gln	Arg	Ser	Leu	Ile	435	440	445	

Ser Leu Lys Arg Thr Ala Ala Ala Arg Arg Asn Leu Pro Ala Ala Ser  
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Arg Leu Cys Val Gln Asp Pro Thr Asn Tyr Met Asn Asp Leu Gly Arg  
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Ser Cys Val Arg Thr Leu Glu Leu Gln His Thr Phe Ser Leu Ala His  
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Asp Arg Leu Gly Ala Ser Leu Lys Arg Trp Asp Asp Ser Glu Pro Ala  
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Ala Asn Val Ser Ile Leu Thr Arg Ala Leu Gln Ala Asn Phe Ser Asp  
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Phe Glu Asn Leu Arg Ala Lys Ser Leu Lys Leu Asn Ala Thr  
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&lt;210&gt; 58

&lt;211&gt; 2356

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 58

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<210> 59

<211> 2356

<212> DNA

<213> *Aspergillus fumigatus*

<400> 59

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 <212> PRT  
 <213> *Aspergillus fumigatus*

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 Leu Glu Ser Gly Leu Gly Arg Arg Asn Phe Val Pro Pro Arg Gln Val  
           35                  40                  45  
 Pro Val Val Asp Ala Met Glu Arg Thr Lys Asn Ala Ile Gln Ser Asn  
       50                  55                  60  
 Asn Ser Ser Ser Arg Ala Gln Leu Ser Asp Ala Leu Pro Glu Ser Glu  
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 Lys Ser Gln Ser Ala Gly Gln Val Ile Val Pro Thr Arg Met Gln Glu  
           85                  90                  95  
 Leu Leu Asp Arg Gly Arg Pro Ile Glu Ala Ala Gln Phe Phe Leu Glu  
           100                  105                  110  
 Thr His Ala Ala Ser Leu Lys Gly Ile Ser Ser Asp Arg Lys Glu Met  
       115                  120                  125  
 Ala Thr Lys Val Phe Phe Val Asn Cys Lys Glu Asp Asn Val Phe Ile  
       130                  135                  140  
 Ala Arg Ser Val Phe Glu Arg Leu Glu Glu Val Asp Arg Ile Thr Pro  
   145                  150                  155                  160  
 Glu Met Trp Lys Thr Leu Met Leu Ala Leu Ala Lys Lys Gly Cys Ile  
           165                  170                  175  
 Glu Ser Val Ala Ser Val Tyr Thr Arg Tyr Met Arg Lys Phe Pro Cys  
       180                  185                  190  
 Pro Pro Glu Met Val Asp Val Val Leu Arg Ser Leu Leu Glu Ser His  
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 Arg Leu Thr Thr Ala Lys Trp Phe Leu Leu Arg Asn Leu Gln His Asp  
       210                  215                  220  
 Arg Asp Cys Gly Leu Cys Gly Ala Tyr Leu Ser Gly Leu Trp Arg Lys  
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 Thr Arg Ser Ile Glu Leu Leu Asn Gly Gln Leu Lys Lys Ile Leu Thr  
           245                  250                  255  
 Ile Leu Pro Lys Phe Glu Lys Gln Pro Ser Asp Lys Leu Phe Asn Pro  
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Trp	Val	Ser	His	Ser	Gly	Ile	Glu	Ile	Arg	Asn	Phe	Val	Phe	Arg	Tyr		
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Leu	Asp	Lys	Phe	Asp	Ile	Val	Pro	Asp	Arg	Val	Leu	Tyr	Lys	His	Ile		
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Leu	Glu	Ala	Phe	Val	Glu	Lys	Gly	Asp	Lys	Glu	Met	Ile	Ala	Glu	Phe		
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Thr	Ser	Met	Ala	Lys	Gln	Arg	Ser	Trp	Asn	Ile	Pro	Ile	Asn	Glu	Gln		
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Gln	Phe	Leu	Glu	Ile	Leu	Arg	Ser	Arg	Arg	Leu	Ala	Leu	Glu	Gly	Ala		
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Pro	Val	Gly	Phe	Trp	Gln	Met	Leu	Gln	Ala	Ala	Arg	Val	Lys	Tyr	Gly		
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Trp	Tyr	Gln	Arg	Thr	Met	Gln	Glu	Thr	Thr	Pro	Ser	Lys	Pro	Val	Asp		
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Phe	Gln	Met	Arg	Gln	Leu	His	Val	Glu	Leu	Ala	Val	Ile	Ala	Thr	Leu		
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Leu	Glu	Asp	Gly	Leu	Ser	Ala	Ala	Arg	Ser	Leu	Ile	Glu	Ser	Glu	Trp		
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Arg	Thr	Ile	Arg	His	Leu	Val	Arg	Phe	Ser	Pro	Ile	Phe	Phe	Arg	Gln		
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Val Leu Arg Phe Tyr Gln Leu Cys Trp Ser Thr Lys His Met Lys Val  
595 600 605

Lys His His Leu Thr Val Ala Thr Ser Arg Arg Leu Ile Ser Gln His  
610 615 620

Lys Pro Glu Met Ala Leu Glu Leu Leu Thr Ala Val Tyr Lys Ser Arg  
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Leu Thr Ala Leu Ser Arg Asp Ser Ala Leu Asn His Asp Phe Val Val  
675 680 685

Glu Val Arg Arg Ile Leu Gly Thr Leu Ser Pro Pro Ser Ala Val Asp  
690 695 700

Ala Thr Ala Gly Pro Val Thr His Glu Gln Leu Glu Tyr Leu Tyr Tyr  
705 710 715 720

Ile Ala Asp Leu Leu Glu Glu Lys Asn Glu Gly Cys Ala Pro Ile Trp  
725 730 735

Glu Leu Lys His Asp Ala Thr Leu Lys Gln Ser Ser Arg Arg Gln Leu  
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Lys Gln Pro Leu Asp Ala Ser Arg Leu Phe Asn Gln Ser Asp Val Arg  
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<211> 21

<212> DNA

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<220>

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primer

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19

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21

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<223> Description of Artificial Sequence: Synthetic  
primer

<220>  
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35

<210> 69  
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<220>  
 <223> Description of Artificial Sequence: Synthetic primer  
  
 <400> 69  
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 <400> 72  
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<400> 73  
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<210> 74  
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<220>  
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<400> 74  
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<210> 75  
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<210> 76  
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<210> 77  
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<210> 78  
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<210> 81  
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<220>  
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<210> 82  
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&lt;400&gt; 91

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 <213> *Aspergillus fumigatus*

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<210> 94

<211> 683

<212> PRT

<213> *Aspergillus fumigatus*

<400> 94

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Ser	Arg	Ser	Arg	Asp	Ser	Ser	Arg	Lys	Trp	Lys	Val	Gly	Ile	Ala	Ser	260	265	270	
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<212> DNA

<213> *Aspergillus fumigatus*

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&lt;211&gt; 2814

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<213> *Aspergillus fumigatus*

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&lt;211&gt; 937

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<213> *Aspergillus fumigatus*

&lt;400&gt; 98

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<213> *Aspergillus fumigatus*

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<213> *Aspergillus fumigatus*

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<213> *Aspergillus fumigatus*

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<213> *Aspergillus fumigatus*

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&lt;210&gt; 104

&lt;211&gt; 2805

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 104

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<210> 105

<211> 2805

<212> DNA

<213> *Aspergillus fumigatus*

<400> 105

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<210> 106

<211> 934

<212> PRT

<213> *Aspergillus fumigatus*

<400> 106

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Pro Ser Ala Lys Ser Lys Arg Gln Pro Pro Lys Lys Val Pro Ser Gln
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Ala Leu Asp Phe Leu Gly Asp Val Asn Glu Asp Asp Asn Asp Asp Glu
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&lt;210&gt; 107

&lt;211&gt; 2413

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 107

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&lt;210&gt; 108

&lt;211&gt; 1413

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 108

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&lt;210&gt; 109

&lt;211&gt; 1287

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 109

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&lt;210&gt; 110

&lt;211&gt; 428

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 110

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10

15

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&lt;210&gt; 111

&lt;211&gt; 2865

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 111

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&lt;210&gt; 112

&lt;211&gt; 1865

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

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 <213> *Aspergillus fumigatus*

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 <213> *Aspergillus fumigatus*

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 Gln Ser Glu Asn Pro Tyr Glu Val Thr Lys Glu Asp Lys Val Gln Pro  
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 Glu Asn Leu Pro Pro Ala Gln Ile Ser Leu Thr Asp Cys Leu Ala Cys  
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His	Thr	Glu	Val	Leu	Asn	Thr	Leu	Asp	Ser	Asp	Gly	Arg	Ile	Phe	Val		
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 450 455 460  
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 Pro His Glu Gln Arg Ala Trp Leu Ala Arg Val Asp Glu Ala Tyr Tyr  
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 Glu Lys Val Asp Ile Pro Leu Ser Arg Leu Ala Tyr Thr Ser Tyr Arg  
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<210> 115

<211> 1510

<212> DNA

<213> *Aspergillus fumigatus*

<400> 115

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<210> 116

<211> 685

<212> DNA

<213> *Aspergillus fumigatus*

<400> 116

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<210> 117

<211> 465

<212> DNA

<213> *Aspergillus fumigatus*

<400> 117

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<210> 118

<211> 149

<212> PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 118

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Gly Arg Val Val Leu Ile Arg Ser Gly Pro Tyr Thr Gly Lys Leu Ala  
 20 25 30

Ala Ile Val Glu Ile Ile Asp His Lys Arg Val Leu Val Asp Gly Pro  
 35 40 45

Ser Thr Glu Glu Asn Lys Ile Val Pro Arg His Ala Leu Pro Leu Ala  
 50 55 60

His Ala Thr Leu Thr Pro Phe Val Ile Pro Lys Leu Pro Arg Ala Ala  
 65 70 75 80

Gly Thr Gly Pro Val Lys Lys Leu Trp Glu Lys Asn Glu Ile Asp Gly  
 85 90 95

Lys Trp Ala Lys Ser Thr Ile Ala Gln Lys Thr Glu Arg Ala Glu Arg  
 100 105 110

Arg Lys Asn Leu Thr Asp Phe Glu Arg Phe Lys Val Leu Arg Leu Lys  
 115 120 125

Lys Gln Ala Arg Tyr Glu Val Gln Lys Ala His Ala Lys Val Arg Ala  
 130 135 140

Ala Ala Pro Lys Ser  
 145

&lt;210&gt; 119

&lt;211&gt; 1942

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 119

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tgccagccgg	agctattgga	ct				1942

&lt;210&gt; 120

&lt;211&gt; 943

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 120

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&lt;210&gt; 121

&lt;211&gt; 603

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 121

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tga						603

<210> 122  
 <211> 200  
 <212> PRT  
 <213> *Aspergillus fumigatus*

<400> 122  
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             20                    25                    30  
 Tyr Pro Asp Thr Phe Asp Leu Ser Val Ser His Thr Thr Arg Ala Pro  
             35                    40                    45  
 Arg Pro Gly Glu Glu Asn Gly Arg Glu Tyr Tyr Phe Thr Thr Lys Glu  
             50                    55                    60  
 Asp Phe Leu Asp Leu Val Ser Lys Asn Ala Phe Ile Glu His Ala Gln  
             65                    70                    75                    80  
 Phe Gly Gly Asn Tyr Tyr Gly Thr Thr Val Gln Ala Val Lys Asp Val  
                     85                    90                    95  
 Ala Gln Lys Gly Lys Ile Cys Val Leu Asp Ile Glu Met Glu Gly Val  
                     100                    105                    110  
 Lys Gln Val Lys Arg Thr Asp Leu Asp Ala Arg Phe Leu Phe Leu Ala  
             115                    120                    125  
 Pro Pro Ser Leu Glu Glu Leu Glu Lys Arg Leu Arg Gly Arg Ala Thr  
             130                    135                    140  
 Glu Thr Glu Glu Ser Leu Thr Lys Arg Leu Ala Gln Ala Lys Asn Glu  
             145                    150                    155                    160  
 Leu Glu Tyr Ala Ala Gln Pro Gly Ser His Asp Lys Ile Val Val Asn  
                     165                    170                    175  
 Asp Asp Leu Glu Lys Ala Tyr Lys Glu Leu Arg Asp Trp Ile Val Asp  
             180                    185                    190  
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<210> 123  
 <211> 3108  
 <212> DNA  
 <213> *Aspergillus fumigatus*

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&lt;210&gt; 124

&lt;211&gt; 2059

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 124

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&lt;210&gt; 125

&lt;211&gt; 1884

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 125

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&lt;210&gt; 126

&lt;211&gt; 641

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 126

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          20              25              30

Asn Asp Val Phe Ile Glu Glu Lys Val Arg Ala Gln Asn Gln Ala Ala
  35              40              45

Ser Ser Ala Ala Pro Ile Tyr Lys Lys Glu Lys Tyr Thr Leu Lys Trp
  50              55              60

Lys Gln Val Lys Asp Phe Asn Leu Ile Phe Val Ala Val Tyr Gln Ser
  65              70              75              80

Leu Leu His Leu Gly Trp Ile Asp Lys Leu Leu Asp Asn Val Ser Thr
          85              90              95

Ile Phe Ile Asp Leu Tyr Lys Asp Glu Leu Arg Ser Thr Arg Ala Arg
          100              105              110

Ile Ile Glu Tyr Pro Phe Asp Lys Tyr Phe Asp Gln Gln Val Arg Glu
          115              120              125

Leu Glu Asp Asn Ala Gly Ala Pro Thr Ser Glu Ser Leu Val Val Glu
          130              135              140

Ile Asn Glu Arg Lys Asp Pro Leu Val Ser Ser Asp Asn Gly Gly Pro
          145              150              155              160

Pro Pro Pro Pro Val Pro Val Ala Gln Gly Val Ala Thr Ser Asp Glu
          165              170              175

Gly Ser Pro Pro Gln Thr Pro Asp Leu Ser Arg Ser Ser Thr Pro Ile
          180              185              190

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Ser	Gly	His	Leu	Leu	Thr	Ala	Lys	Gly	Gly	Pro	Ala	Gly	Arg	Ala	Ser	195	200	205
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Asp	Glu	Ser	Ile	Arg	Lys	Gly	Lys	Thr	Leu	Lys	Ser	Gly	Lys	Lys	Met	225	230	235
Arg	Lys	Trp	Asp	Ala	Asp	Gly	Phe	Ala	Asp	Glu	Asp	Asp	Gly	Lys	Val	245	250	255
Leu	Asp	Tyr	Ser	Ala	Pro	Ala	Asp	Gly	Glu	Asp	Ala	Pro	Ala	Pro	Val	260	265	270
Val	Glu	Ala	Val	Ala	Gln	Glu	Ser	Trp	Gly	Arg	Arg	Thr	Gly	Lys	Gly	275	280	285
Gln	Phe	Val	Leu	Lys	Asp	Leu	Gly	Asp	Glu	Val	His	Ser	Ile	Leu	Glu	290	295	300
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Glu	Asp	His	Leu	Leu	Lys	Lys	Asn	Val	Ala	Arg	Glu	Ala	Ala	Val	Arg	355	360	365
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Phe	Gln	Ser	Val	Asp	Ala	Ala	Leu	Arg	Ser	Ala	Met	Glu	Ser	Ser	Leu	385	390	395
Arg	Lys	Ile	Leu	Thr	Pro	Thr	Ser	Ser	Leu	Asp	Leu	Leu	Arg	Glu	Ile	405	410	415
Asp	Ala	Val	Arg	Ser	Pro	Thr	Ser	Lys	Gly	Gln	Ala	Pro	Arg	Pro	Tyr	420	425	430
Val	Ile	Ser	Ile	Val	Gly	Val	Asn	Gly	Val	Gly	Lys	Ser	Thr	Asn	Leu	435	440	445
Gly	Lys	Ile	Cys	Tyr	Phe	Leu	Leu	Gln	Asn	Asn	Tyr	Arg	Val	Leu	Ile	450	455	460
Ala	Ala	Cys	Asp	Thr	Phe	Arg	Ser	Gly	Ala	Val	Glu	Gln	Leu	Arg	Val	465	470	475
His	Ala	Arg	Asn	Leu	Lys	Glu	Leu	Ser	Thr	Arg	Glu	Asn	Ala	Gly	Glu	485	490	495

Val Glu Leu Tyr Glu Lys Gly Tyr Gly Lys Asp Ala Ala Asn Val Ala  
500 505 510

Lys Asp Ala Val Glu Tyr Gly Ala Ala Asn His Phe Asp Val Val Leu  
515 520 525

Ile Asp Thr Ala Gly Arg Arg His Asn Asp Gln Arg Leu Met Ser Ser  
530 535 540

Leu Glu Lys Phe Ala Lys Phe Ala Lys Pro Asp Lys Ile Phe Met Val  
545 550 555 560

Gly Glu Ala Leu Val Gly Thr Asp Ser Val Met Gln Ala Arg Asn Phe  
565 570 575

Asn Gln Ala Phe Gly Thr Gly Arg Asn Leu Asp Gly Phe Ile Ile Ser  
580 585 590

Lys Cys Asp Thr Val Gly Asp Met Val Gly Thr Leu Val Ser Met Val  
595 600 605

His Ala Thr Gly Ile Pro Ile Val Phe Leu Gly Val Gly Gln His Tyr  
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Lys

<210> 127

<211> 2564

<212> DNA

<213> *Aspergillus fumigatus*

<400> 127

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&lt;210&gt; 128

&lt;211&gt; 1564

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 128

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 <212> DNA  
 <213> *Aspergillus fumigatus*

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                   20                  25                  30  
 Ala Thr Glu Lys Glu Leu Tyr Ser Lys Leu Trp Ala Asp Leu Glu Gly  
           35                  40                  45  
 Tyr Asn Leu Asp Phe Glu Ser Pro Lys Asn Asp Lys Leu Ser Leu Phe  
   50                  55                  60  
 Glu Leu Gly Asp Arg Val Tyr Asp His Met Leu Leu Leu Pro Pro Lys  
   65                  70                  75                  80  
 Ser Lys Gly Tyr Gly Pro Ser Leu Thr Pro Lys Asn Ile Ile Asp Phe  
                   85                  90                  95

Met	Asn	Lys	Asp	Gly	Asn	Val	Leu	Leu	Ala	Leu	Ser	Gly	Lys	Ser	Thr	100	105	110	
Thr	Ala	Ser	Ala	Ile	Ser	Ser	Leu	Leu	Leu	Glu	Leu	Asp	Leu	His	Leu	115	120	125	
Pro	Val	Asp	Arg	Ser	Ser	Val	Thr	Val	Asp	His	Phe	Asn	Tyr	Asp	Thr	130	135	140	
Leu	Ser	Ala	Ser	Asp	Lys	His	Asp	Val	Leu	Leu	Leu	His	Arg	Pro	Gly	145	150	155	160
Lys	Leu	Arg	Ser	Asp	Thr	Lys	Ala	Phe	Phe	Asp	Gly	Glu	Gly	Val	Val	165	170	175	
Ala	Phe	Pro	Arg	Ala	Val	Pro	His	Thr	Leu	Gly	Asp	Ala	Asn	Pro	Leu	180	185	190	
Ile	Ala	Pro	Ile	Leu	Arg	Ala	Pro	Ala	Thr	Ala	Tyr	Ser	Tyr	Asn	Pro	195	200	205	
Lys	Glu	Asp	Ala	Ser	Ser	Val	Glu	Asp	Val	Ala	Ala	Thr	Gly	Ser	Gln	210	215	220	
Leu	Ala	Leu	Val	Ser	Ala	Met	Gln	Ala	Arg	Asn	Ser	Ala	Arg	Phe	Thr	225	230	235	240
Leu	Leu	Gly	Ser	Val	Glu	Ser	Leu	Gln	Asp	Gln	Trp	Phe	Ser	Ala	Thr	245	250	255	
Val	Lys	Ala	Pro	Gly	Asp	Gly	Lys	Gln	Met	Lys	Thr	Val	Asn	Gln	Glu	260	265	270	
Phe	Ala	Lys	Gln	Leu	Thr	Ala	Trp	Thr	Phe	Lys	Glu	Thr	Gly	Val	Leu	275	280	285	
Lys	Val	Gly	Lys	Ile	Glu	His	His	Leu	Ala	Glu	Asp	Gly	Glu	Ile	Thr	290	295	300	
Pro	Glu	Lys	Leu	Asn	Pro	Lys	Ile	Tyr	Arg	Ile	Lys	Asn	Glu	Thr	Val	305	310	315	320
Phe	Ser	Ile	Glu	Leu	Ser	Glu	Tyr	Asn	Tyr	Asp	Arg	Tyr	Ala	Pro	Phe	325	330	335	
Glu	Val	Pro	Thr	Gly	Asp	Ala	Val	Gln	Leu	Glu	Phe	Thr	Met	Leu	Ser	340	345	350	
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Thr	Val	Tyr	Ser	Thr	Arg	Phe	Thr	Thr	Pro	Asp	Gln	His	Gly	Ile	Phe	370	375	380	
Ser	Phe	Arg	Val	Asn	Tyr	Lys	Arg	Pro	Phe	Leu	Thr	Asn	Ile	Glu	Glu	385	390	395	400

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<210> 131

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<212> DNA

<213> *Aspergillus fumigatus*

<400> 131

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<210> 132

<211> 2376

<212> DNA

<213> *Aspergillus fumigatus*

<400> 132

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&lt;211&gt; 2148

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

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&lt;210&gt; 134

&lt;211&gt; 715

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 134

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&lt;210&gt; 136

&lt;211&gt; 2639

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 136

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&lt;210&gt; 137

&lt;211&gt; 2430

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 137

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&lt;210&gt; 138

&lt;211&gt; 809

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 138

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Gly Arg Leu His Ala Tyr Glu Pro Arg Thr Ala Glu Ala Ser Tyr Leu
      35             40             45

Leu Ala Leu Cys His Leu Gln Asn Gly Gln Val Lys Ala Ala Tyr Asp
      50             55             60

Tyr Ser Arg Asn Phe Gly Ser Arg Gly Thr His Leu Gly Cys Ser Tyr
      65             70             75             80

Val Phe Ala Gln Ala Cys Leu Asp Leu Gly Lys Tyr Leu Glu Gly Ile
      85             90             95

Thr Ala Leu Glu Arg Ser Lys Gly Leu Trp Ala Ser Lys Asn His Trp
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Asn Lys His Ser Glu Thr Arg Arg Gln His Leu Pro Asp Ala Ala Ala
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Val Phe Cys Leu Leu Gly Lys Leu Trp His Ala His Lys Asp Ile Asn
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Trp Asp Ala Phe Gln Gly Leu Cys Asp Thr Gly Val Asn Val Arg Val
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<210> 139

<211> 2684

<212> DNA

<213> *Aspergillus fumigatus*

<400> 139

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 <213> *Aspergillus fumigatus*

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<210> 141  
 <211> 1707  
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 <213> *Aspergillus fumigatus*

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<210> 142

<211> 568

<212> PRT

<213> *Aspergillus fumigatus*

<400> 142

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Asn Ser Leu His Gly Thr Arg Asp Leu Leu Glu Lys Ile Lys Gln Met
  35             40             45

Pro Val Thr Leu Pro Glu Asp Thr Leu Glu Thr Tyr Glu Phe Asn His
  50             55             60

Leu Leu Arg Asn Val Lys Glu Ala Thr Leu Val Leu Arg Asn Met Val
  65             70             75             80

Leu Leu Lys Glu Asn Ala Tyr Tyr Val Ser Arg Tyr Ala Lys Gly Leu
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Leu Arg Asp Phe Leu Val Ile Met Ile Asn Leu Pro Asn Gln Pro Arg
 100            105            110

Leu Asn Glu Ile Lys Asn Asp Ala Leu Asp Ile Ala Glu Glu Val Thr
 115            120            125

Lys Phe Met Lys Thr Asp Pro Glu Asp Pro Leu Trp Ile Ser Leu Leu
 130            135            140

Asn Cys Leu Gly Ser Ser Asp Arg Ala His Val Val Arg Ala Leu Trp
 145            150            155            160

Ala Leu Thr His Phe Ser Thr Glu Leu Asp Glu Pro Glu Ala Asn Arg
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Gly	His	Tyr	Asn	Leu	Glu	Lys	Ala	Glu	Ser	Pro	Val	His	Thr	Cys	Leu		
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Ala	Met	Val	Ala	Gly	His	Val	Ser	Ala	His	Leu	Pro	Glu	Glu	Arg	Ala		
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<211> 2542
<212> DNA
<213> Aspergillus fumigatus
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<210> 144

<211> 1542

<212> DNA

<213> *Aspergillus fumigatus*

<400> 144

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<210> 145

<211> 1482

<212> DNA

<213> *Aspergillus fumigatus*

<400> 145

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gagccgcact gttcatatgc gtcctttgag accaacgtac cgcactcgca gaacggccag 1200
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tacctggccg ctgcgtcgac cgccaaaatg gaacatgtgg agggatatcg ccgagtggac 1380
cggattgtcc acgacctga cggctatgag cttgtcttcc gctattatga acgcctggac 1440
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&lt;210&gt; 146

&lt;211&gt; 493

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 146

```

Met Val Tyr Ile Gly Ile Pro Lys Asn Tyr Thr Ala Ser Pro Ser Ser
  1              5              10              15

Phe Ala Gly Thr Pro Ser Leu Thr Ile Asn Tyr Glu Ala Thr Gln Asp
      20              25              30

Leu Asp Ser Thr Asn Ala Phe Glu Gly Pro Glu Lys Leu Leu Glu Val
      35              40              45

Trp Phe Ala Pro Ser Ala Gln Glu Leu Gly Pro Ala Gln Pro Ala Gly
      50              55              60

Leu Lys Ala Val Pro Glu Glu Ile Trp Lys Asp Met Leu Asp Leu Val
      65              70              75              80

Asn Cys Gln Val Leu Ser Ile Val Ser Ser Glu Asp Val Asp Ala Tyr
      85              90              95

Leu Leu Ser Glu Ser Ser Met Phe Val Trp Pro His Lys Leu Ile Leu
      100             105             110

Lys Thr Cys Gly Thr Thr Thr Leu Leu Ser Gly Leu Pro Arg Ile Leu
      115             120             125

Glu Ile Ala Ala Leu Phe Gly Gly Phe Pro Lys Ser Thr Ala Pro Ser
      130             135             140

Arg Gly Ile Ser Val Ala Ala Ala Pro Tyr Arg Val Phe Tyr Ser Arg
      145             150             155             160

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Lys	Asn	Phe	Leu	Phe	Pro	Asp	Arg	Gln	Arg	Gly	Pro	His	Arg	Ser	Trp	165	170	175
Arg	Asp	Glu	Val	Arg	Thr	Met	Asp	Lys	Leu	Phe	Leu	Asn	Gly	Ser	Ala	180	185	190
Tyr	Met	Ile	Gly	Lys	Met	Asn	Gly	Glu	His	Trp	Tyr	Leu	Tyr	Leu	Thr	195	200	205
Glu	Pro	His	Thr	Met	Leu	Thr	Pro	Pro	Thr	Ser	Pro	Gly	Ala	Lys	Thr	210	215	220
Glu	Phe	Thr	Glu	Thr	Glu	Thr	Lys	Val	Leu	Ser	Val	Pro	Gln	Gly	Ala	225	230	235
Ala	Leu	Gln	Thr	Asp	Ser	Glu	Asp	Glu	Thr	Leu	Glu	Val	Leu	Met	Thr	245	250	255
Asp	Leu	Asp	Glu	Glu	Asn	Ala	Lys	Gln	Phe	Tyr	Leu	Glu	Asn	Ala	Thr	260	265	270
Ala	Val	Ala	Glu	Asn	Arg	Tyr	Arg	Asn	Ser	Asn	Ser	Glu	Lys	Ser	Gly	275	280	285
His	Val	Asp	Val	Phe	Ser	Asn	Thr	Ser	Ser	Asp	Ile	Ser	Asp	Phe	Asp	290	295	300
Ser	Asp	Gly	Ser	Gln	Val	Leu	Pro	Pro	Glu	Leu	Thr	Thr	Glu	Gly	His	305	310	315
Ala	Leu	Gly	Thr	Val	Val	Ser	Glu	Ala	Cys	Gly	Leu	Ser	Ser	Val	Tyr	325	330	335
Pro	Lys	Glu	Lys	Tyr	Pro	Asp	Ser	Arg	Ile	Asp	Ala	Tyr	Leu	Phe	Thr	340	345	350
Pro	Cys	Gly	Phe	Ser	Ala	Asn	Gly	Val	Ile	Pro	Pro	Pro	Glu	Gly	Lys	355	360	365
Ala	Gly	Thr	His	Tyr	Phe	Thr	Val	His	Val	Thr	Pro	Glu	Pro	His	Cys	370	375	380
Ser	Tyr	Ala	Ser	Phe	Glu	Thr	Asn	Val	Pro	His	Ser	Gln	Asn	Gly	Gln	385	390	395
Thr	Thr	Ala	Gly	Ile	Ile	Lys	Gln	Val	Val	Asp	Ile	Phe	Lys	Pro	Gly	405	410	415
Arg	Phe	Ser	Val	Thr	Leu	Phe	Glu	Ala	Lys	Pro	Ala	Leu	Ser	Gln	Val	420	425	430
Glu	Asp	Glu	Trp	Lys	Glu	Ala	Lys	Tyr	Leu	Ala	Ala	Arg	Arg	Thr	Ala	435	440	445
Lys	Met	Glu	His	Val	Glu	Gly	Tyr	Arg	Arg	Val	Asp	Arg	Ile	Val	His	450	455	460

Asp Leu Asp Gly Tyr Glu Leu Val Phe Arg Tyr Tyr Glu Arg Leu Asp  
 465 470 475 480

Trp Lys Gly Gly Ala Pro Arg Leu Gly Glu Glu Arg Ser  
 485 490

<210> 147

<211> 1637

<212> DNA

<213> *Aspergillus fumigatus*

<400> 147

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tctactgat ctagtgatat aaagtttgga tgcattatgt aaattaaatc tcgggggcaa 180
atgaacattt cgaatatcgt tataaaactc acagaaagtg ctgtcaatgg cacaaattta 240
gcaatcaata ctcatctgag tatgttggtg ataagtccga aaacaacctt aatatttacc 300
tcattaggaa aggtgcactc cgtagttacc tcgactcgcg gttagtctgg tgactaagtt 360
cttggcggtg tgatgagggc aagtcctatc atgtgatcat agttaggggt tccacacacc 420
aggctctcca atatagcaag aaaatagaag gattaggtct cgtctccgaa catccatccc 480
gccagcacac aaccgccaaa atgggtcgcg ttagaaccaa ggtaagttac agatgaagca 540
tcatgagtta tcttcaaaaa agccccaaaa gagtatcatt tctgacgaaa tgggtttttc 600
ttcaatagac agtcaagagg tccgccaaagg tcatcatcga gcgctactac cccaagtga 660
cgctcgactt tgagaccaac aagcgtcttt gcgatgagat cgctatcatt gcctccaagc 720
gccttcgcaa caaggtgggc aatccatcac tgagccgtac aacagtcgga atttgacttg 780
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gctcaatcac acttgctctg gctgacttcg cagctatgat gtagcctaga gacacaggaa 1260
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gtatcgctcat aagcacaaag acgccgtaga accacaaatc gaaccacccc atcgaattct 1560
gtcgtgacca ggctcacgcc aaaccgcgtg agattgaagc atatcatgat cagatttcct 1620
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<210> 148

<211> 637

<212> DNA

<213> *Aspergillus fumigatus*

<400> 148

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tccgccaaagg tcatcatcga gcgctactac cccaagttga cgctcgactt tgagaccaac 180
aagcgtcttt gcgatgagat cgctatcatt gcctccaagc gccttcgcaa caaggtgggc 240
aatccatcac tgagccgtac aacagtcgga atttgacttg ctgacgaaaa ctagattgct 300
ggttacacca cccaccttat gaagcgtagc cagcgtggcc ctgtccgcgg tatctctttc 360
aagctgcagg aggaggagcg tgagcgcaag gatcagtagc ttccctgaggt ttccgctctg 420
gatgtttccc agaccgagtc cggccagctc gatgtcgatg ccgacaccaa ggaccttctc 480
aagtccatgg gcgtaagttc tgttctcaac gcggttggtc gtggttttaa agcagtcctg 540

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taacttatat tgccactac agttcgacaa tctcaaggtc aacgttgtca acgtctccca 600  
 acatcagggtt caggagcgcc cccgccgctt ccggtag 637

<210> 149  
 <211> 420  
 <212> DNA  
 <213> *Aspergillus fumigatus*

<400> 149  
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 attgcctcca agcgccttcg caacaagatt gctgggttaca ccacccacct tatgaagcgt 180  
 atccagcgtg gccctgtccg cggtatctct ttcaagctgc aggaggagga gcgtgagcgc 240  
 aaggatcagt acgttcctga ggtttcgct ctggatgttt cccagaccga gtccggccag 300  
 ctcgatgtcg atgccgacac caaggacctt ctcaagtcca tgggcttcga caatctcaag 360  
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<210> 150  
 <211> 139  
 <212> PRT  
 <213> *Aspergillus fumigatus*

<400> 150  
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 Ile Glu Arg Tyr Tyr Pro Lys Leu Thr Leu Asp Phe Glu Thr Asn Lys  
           20                    25                    30  
 Arg Leu Cys Asp Glu Ile Ala Ile Ile Ala Ser Lys Arg Leu Arg Asn  
           35                    40                    45  
 Lys Ile Ala Gly Tyr Thr Thr His Leu Met Lys Arg Ile Gln Arg Gly  
       50                    55                    60  
 Pro Val Arg Gly Ile Ser Phe Lys Leu Gln Glu Glu Glu Arg Glu Arg  
       65                    70                    75                    80  
 Lys Asp Gln Tyr Val Pro Glu Val Ser Ala Leu Asp Val Ser Gln Thr  
           85                    90                    95  
 Glu Ser Gly Gln Leu Asp Val Asp Ala Asp Thr Lys Asp Leu Leu Lys  
          100                    105                    110  
 Ser Met Gly Phe Asp Asn Leu Lys Val Asn Val Val Asn Val Ser Gln  
      115                    120                    125  
 His Gln Val Gln Glu Arg Pro Arg Arg Phe Arg  
      130                    135

<210> 151  
 <211> 2037  
 <212> DNA  
 <213> *Aspergillus fumigatus*

&lt;400&gt; 151

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tgtgctgaaa atgacagcga cctatgcggt gcccggttag cgaagagcac tggctggaaa 180
taagaagttt attagaggag cctcatgatg cataatcatt gtaagcgcac gatgcacaat 240
aatatatccg aatttctcca gatgacacta agataataac gaaaatatca catgacggtg 300
tgggcaggta tgtattatgt aatctgatcg gtagggccga tgtctcgctt agcggacttt 360
tctgtgggat tgcaatttca acttattatt ccgccgacca gcaacaaagc ggttactcga 420
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gatagacttg agtcgcagtt atggcggttg gaaagtatgc caattcactt ctattattgt 540
tctgaacgct tttagcatgt gtctggatac ggtggtttac aggtactgat ccgggaacag 600
gaacaagcgc ttgtcgaagg gcaagaaggg tgtaaagaag aggaccgttg atcctttctc 660
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agaagtatgg ttatacataa tgttgaatag ttagtatgat ttattaatat tattttcagt 1980
gcactgatat atatcataat gctactaaat atagctaccc taagatttat atagaga 2037

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&lt;210&gt; 152

&lt;211&gt; 1037

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 152

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atggcggttg gaaagtatgc caattcactt ctattattgt tctgaacgct tttagcatgt 60
gtctggatac ggtggtttac aggtactgat ccgggaacag gaacaagcgc ttgtcgaagg 120
gcaagaaggg tgtaagaag aggaccgttg atcctttctc caggaaggac gaataactctg 180
ttaaggatat tgcacgtgga ctgtgtaagt cgaccgcagc taatctatat caggcgctt 240
ccactttcca gatcagagag tatgttgcat gcatatgatg tcgaattgca ggataaaggc 300
gattcacaat ggtagtgag attatgctga ctgaattata gtgtcgggaa gactctggtc 360
aaccgcacca gtggtctcaa gaacgccaat gactccctga agggtcgaat tttcgaggtc 420
tcgctggctg acctgcagaa tgatgaagac catgctttcc gcaaggttaa gcttcgtgtg 480
gacgaggttc agggcaagaa ctgtttgacc aacttccacg gtcttgattt cacaaccgac 540
aaattgcat ccctcgtcgc caagtggcag tcgctgatcg aagccaatgt cactgtgaag 600
acgaccgatg attatctct tcggcttttt gctatcgct tcaccaagag acgcccgaac 660
cagattaaga agaccacata tgctcgttct tctcaaattcc gtgccatccg caagaagatg 720
attgaaatca tgcagaggga ggcagccagc tgctctctcg ctgagctcac tcacaagctc 780
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aatgtgtgtg accctgttat tcttactcgg gatgaagact aactgcaatc taggtccata 900

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ttcgcaaggt caagcttctt aaggctccca agttcgacct ggggtgactg ctgaatctgc 960
acggtgaatc tacaaccgat gataagggcc acaaggctcga gagagagttc aaggagcagg 1020
ttctcgaaaag cgtttaa 1037

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&lt;210&gt; 153

&lt;211&gt; 771

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 153

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atggcggttg gaaagaacaa gcgcttgctg aagggaaga aggggtgttaa gaagaggacc 60
gttgatcctt tctccaggaa ggacgaatac tctgttaagg cgcttccac tttccagatc 120
agagatgtcg ggaagactct ggtcaaccgc accagtggtc tcaagaacgc caatgactcc 180
ctgaagggtc gaatcttcga ggtctcgctg gctgacctgc agaattgatga agaccatgct 240
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cacggtcttg atttcacaac cgacaaattg cgatccctcg tgcgcaagtg gcagtcgctg 360
atcgaagcca atgtcactgt gaagacgacc gatgattatc tccttcggct ttttgctatc 420
gccttcacca agagacgccc gaaccagatt aagaagacca catatgctcg ttcttctcaa 480
atccgtgcca tccgcaagaa gatgattgaa atcatgcaga gggaggcagc cagctgctct 540
ctcgctcagc tcaactcaca gctcattcct gaggtcattg gtcgtgagat cgagaaggct 600
acccagggaa tctatccttt gcagaatgct catattcgca aggtcaagct tcttaaggct 660
cccaagttcg acctgggtgc actgctgaat ctgcacgggtg aatctacaac cgatgataag 720
ggccacaagg tcgagagaga gttcaaggag caggttctcg aaagcgttta a 771

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&lt;210&gt; 154

&lt;211&gt; 256

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 154

```

Met Ala Val Gly Lys Asn Lys Arg Leu Ser Lys Gly Lys Lys Gly Val
  1              5              10              15

Lys Lys Arg Thr Val Asp Pro Phe Ser Arg Lys Asp Glu Tyr Ser Val
      20              25              30

Lys Ala Pro Ser Thr Phe Gln Ile Arg Asp Val Gly Lys Thr Leu Val
      35              40              45

Asn Arg Thr Ser Gly Leu Lys Asn Ala Asn Asp Ser Leu Lys Gly Arg
      50              55              60

Ile Phe Glu Val Ser Leu Ala Asp Leu Gln Asn Asp Glu Asp His Ala
      65              70              75              80

Phe Arg Lys Val Lys Leu Arg Val Asp Glu Val Gln Gly Lys Asn Cys
      85              90              95

Leu Thr Asn Phe His Gly Leu Asp Phe Thr Thr Asp Lys Leu Arg Ser
      100              105              110

Leu Val Arg Lys Trp Gln Ser Leu Ile Glu Ala Asn Val Thr Val Lys
      115              120              125

Thr Thr Asp Asp Tyr Leu Leu Arg Leu Phe Ala Ile Ala Phe Thr Lys
      130              135              140

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Arg Arg Pro Asn Gln Ile Lys Lys Thr Thr Tyr Ala Arg Ser Ser Gln  
 145 150 155 160  
 Ile Arg Ala Ile Arg Lys Lys Met Ile Glu Ile Met Gln Arg Glu Ala  
 165 170 175  
 Ala Ser Cys Ser Leu Ala Gln Leu Thr His Lys Leu Ile Pro Glu Val  
 180 185 190  
 Ile Gly Arg Glu Ile Glu Lys Ala Thr Gln Gly Ile Tyr Pro Leu Gln  
 195 200 205  
 Asn Val His Ile Arg Lys Val Lys Leu Leu Lys Ala Pro Lys Phe Asp  
 210 215 220  
 Leu Gly Ala Leu Leu Asn Leu His Gly Glu Ser Thr Thr Asp Asp Lys  
 225 230 235 240  
 Gly His Lys Val Glu Arg Glu Phe Lys Glu Gln Val Leu Glu Ser Val  
 245 250 255

&lt;210&gt; 155

&lt;211&gt; 1819

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 155

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tgaggattga agatgggcca ggtcaatttg ggatgttcgt tgtgggacta ggggtttttt 180
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ccccgacccc gaaccagact atggcaactt cgactgggac cggatgggct cagctccggc 540
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caccttggtt tcttcccgcc cattcctcag cgggtagctt cgactcgaga ctgattcttc 1620
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gcccgtacc cgcccatcgg atgacgacgt tctcgtccag cagatagaca taaccaactt 1740
tactgttcat cattccgatt gcttctttca acccatccgt aagacctttg cgcacaagga 1800
aataccgttc gtgctgctc                                     1819

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&lt;210&gt; 156

&lt;211&gt; 819

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 156

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atggcaactt cgactgggac cggatgggct cagctccggc agcaagcccg ttcgcttgag 60
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acaataatgt tcctagaccg agagtctgtt tcacacctat gcgcagtatg catcgatgac 180
gaagctgcct ccgaaaccct cagaagaaga acaacggatt gaatcgcaac tgaaggatct 240
tcttgaaaag gtgtgcactt tgaggccctc tagtccagcc caacagacga tcatgctgac 300
acgatccgat catagcgtga agccctcatc tcccagctct cccgtctcct tgactccgaa 360
gccactctta ccgcactctgc cctgaaacag agcaatcttg cccgcaatcg cgaagtcttc 420
caggatcatc gccgcgaatt gcagcgccctg aacgccgcaa tcgccgagtc ccgcgaccga 480
gccaatcttc tgtctaactg ccgctccgac attgatgcct accgcaatc aaaccccgcc 540
gcggtgagg cagactacat gctcgaggag cggggtcgta tagatgaaag ccataacatg 600
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accctggcca gcatcaatcg ccgtatcgtc ggtgctgcca ataaggtagc aggaatgaat 720
gcattgattg gtaagattgg gacgaagagg agacgtgacg caatcatctt gggggctttc 780
atcggtttt gtttcttgat ggtgttcttc ttccgatga                                     819

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&lt;210&gt; 157

&lt;211&gt; 684

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 157

```

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actcagaccg agagtctgtt tcacacctat gcgcagtatg catcgatgac gaagctgcct 120
ccgaaaccct cagaagaaga acaacggatt gaatcgcaac tgaaggatct tcttgaaaag 180
cgtgaagccc tcatctccca gctctccgt ctccttgact ccgaagccac tcttaccgca 240
tctgccctga aacagagcaa tcttgcccg cgcgcgaag tcctccagga tcatcgccgc 300
gaattgcagc gcctgaacgc cgcaatcgcc gactcccgcg accgagccaa tcttctgtct 360
aacgtccgct ccgacattga tgcctaccgc aattcaaacc ccgccgcgcc tgaggcagac 420
tacatgctcg aggagcgggg tcgtatagat gaaagccata acatgataga tgggtgtccta 480
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aatcgccgta tcgtcgggtg tgccaataag gtaccaggaa tgaatgcatt gattggtaag 600
attgggacga agaggagacg tgacgcaatc atcttggggg ctttcatcgg cttttgtttc 660
ttgatggtgt tcttcttccg atga                                     684

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&lt;210&gt; 158

&lt;211&gt; 227

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 158

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Met Ala Thr Ser Thr Gly Thr Gly Trp Ala Gln Leu Arg Gln Gln Ala
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                     20                    25                    30  
 Tyr Ala Ser Met Thr Lys Leu Pro Pro Lys Pro Ser Glu Glu Glu Gln  
                     35                    40                    45  
 Arg Ile Glu Ser Gln Leu Lys Asp Leu Leu Glu Lys Arg Glu Ala Leu  
                     50                    55                    60  
 Ile Ser Gln Leu Ser Arg Leu Leu Asp Ser Glu Ala Thr Leu Thr Ala  
                     65                    70                    75                    80  
 Ser Ala Leu Lys Gln Ser Asn Leu Ala Arg Asn Arg Glu Val Leu Gln  
                     85                    90                    95  
 Asp His Arg Arg Glu Leu Gln Arg Leu Asn Ala Ala Ile Ala Glu Ser  
                     100                    105                    110  
 Arg Asp Arg Ala Asn Leu Leu Ser Asn Val Arg Ser Asp Ile Asp Ala  
                     115                    120                    125  
 Tyr Arg Asn Ser Asn Pro Ala Ala Ala Glu Ala Asp Tyr Met Leu Glu  
                     130                    135                    140  
 Glu Arg Gly Arg Ile Asp Glu Ser His Asn Met Ile Asp Gly Val Leu  
                     145                    150                    155                    160  
 Ser Gln Ala Tyr Ala Ile Asn Glu Ser Phe Gly Leu Gln Arg Glu Thr  
                     165                    170                    175  
 Leu Ala Ser Ile Asn Arg Arg Ile Val Gly Ala Ala Asn Lys Val Pro  
                     180                    185                    190  
 Gly Met Asn Ala Leu Ile Gly Lys Ile Gly Thr Lys Arg Arg Arg Asp  
                     195                    200                    205  
 Ala Ile Ile Leu Gly Ala Phe Ile Gly Phe Cys Phe Leu Met Val Phe  
                     210                    215                    220  
 Phe Phe Arg  
 225

&lt;210&gt; 159

&lt;211&gt; 2601

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 159

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 tcctgcctcc ttttcgtctt ctttttttcc cctttttatc ttttcatttt atcatctttg 120  
 ttactgtttt cccaaacgaa tccattatta tttctttccc ttggagggtt cctactgtgg 180  
 tcttggtgct gcaactcttg caagcccatt ggtccttgct ctgagcctat cacttgcgat 240  
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 atccaccatt cggatattcc gcccatccaa agcgaacacc cctcctttctg ctccaccatc 360  
 gattgcagtc tgcccaaaac ggacttcaga actcccttct acgctatttt ccgccattca 420  
 ctggtgaagt gcagccctcc atactctcga tagcaactgc ccaaccccc ctttactgcc 480  
 aacccccaaa gttgcccgtg atgtcacaaa atcgacctgg ggtgttctcg aatctgcgca 540

```

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gctagacatt gacaacttca ctctctcac gaaggaggag atgatggcac gtctcgactg 2100
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agcggttttc gtgaggcggt ggtgcatcat gacaatatca tgcaacgggg ttgaggaatt 2460
gtcatagtct ggagttttcg aggtgtctga gacagctctt gggaaaggaa aaaaagtgat 2520
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&lt;210&gt; 160

&lt;211&gt; 1601

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 160

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ctttccgacc atacagaagt cgtccgcgag aagggtccagg atggactgac aggggaaact 180
aaggagattt cgtactcaca atgtaaaatc gtcggcaatg gatcgttttg tgctgtcttt 240
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cgcttcaaag tatgtgtaca ttataagggc aattgcctc gctgccaac ccaaagatac 360
tgctgctgac gagataccag aatcgagaac tgcagattat gcggattgtt cgccatccta 420
acatcgtaga attgaaagcc ttctattact cgaacggcga gagggtatgc gactctcctt 480
tgtctcccca ttcgttctag tttgccgttt gctgactacc ctaccattgt ctttcacaga 540
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cgcggtactt taataaactc aaaacgacta tgccaatgtt ggaagtcaag ctgtatatct 660
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cggccaagat tctggtagag aatgagccca acgtttccta tatctgttcc cgctactatc 840
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ctcctctcac gaaggaggag atgatggcac gtctcgactg a 1601

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&lt;210&gt; 161

&lt;211&gt; 1185

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 161

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gtcggcaatg gatcggttgg tgtcgtcttt cagacgaaaa tgatgccaag cggcgaggat 180
gctgaccatta agagggtcct tcaagacaag cgcttcaaaa atcgagaact gcagattatg 240
cggattgttc gccatcctaa catcgtagaa ttgaaagcct tctattactc gaacggcgag 300
aggaaggatg aagtgtacct aaacctcggt ctcgaaatcg taccagaaac cgtgtatcgg 360
gcgtcgcggt actttaataa actcaaaacg actatgccaa tgttggaagt caagctgtat 420
atctatcaat tgttccggtt cctggcatac atccattcac aaggcatctg ccaccgtgac 480
atcaagcccc agaattctctt acttgatcca tccaccggca tcctcaaact ctgcgacttt 540
ggttcggcca agattctggt agagaatgag cccaacggtt cctatatctg tccccgtac 600
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cgcaccatga acccaaaacta tatggagcac aaattccctc aaatcaagcc acaccattc 840
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cggctggttc cccctcatgc acgcgccgct ctcgaggccc ggggggctaga cattgacaac 1140
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&lt;210&gt; 162

&lt;211&gt; 394

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 162

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Met Ser Gln Asn Arg Pro Gly Val Phe Ser Asn Leu Arg Met Gly Glu
  1             5             10             15

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Val Val Arg Glu Lys Val Gln Asp Gly Leu Thr Gly Glu Thr Lys Glu
      20             25             30

```

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Ile Ser Tyr Ser Gln Cys Lys Ile Val Gly Asn Gly Ser Phe Gly Val
    35             40             45

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Val	Phe	Gln	Thr	Lys	Met	Met	Pro	Ser	Gly	Glu	Asp	Ala	Ala	Ile	Lys	50	55	60	
Arg	Val	Leu	Gln	Asp	Lys	Arg	Phe	Lys	Asn	Arg	Glu	Leu	Gln	Ile	Met	65	70	75	80
Arg	Ile	Val	Arg	His	Pro	Asn	Ile	Val	Glu	Leu	Lys	Ala	Phe	Tyr	Tyr	85	90	95	
Ser	Asn	Gly	Glu	Arg	Lys	Asp	Glu	Val	Tyr	Leu	Asn	Leu	Val	Leu	Glu	100	105	110	
Tyr	Val	Pro	Glu	Thr	Val	Tyr	Arg	Ala	Ser	Arg	Tyr	Phe	Asn	Lys	Leu	115	120	125	
Lys	Thr	Thr	Met	Pro	Met	Leu	Glu	Val	Lys	Leu	Tyr	Ile	Tyr	Gln	Leu	130	135	140	
Phe	Arg	Ser	Leu	Ala	Tyr	Ile	His	Ser	Gln	Gly	Ile	Cys	His	Arg	Asp	145	150	155	160
Ile	Lys	Pro	Gln	Asn	Leu	Leu	Leu	Asp	Pro	Ser	Thr	Gly	Ile	Leu	Lys	165	170	175	
Leu	Cys	Asp	Phe	Gly	Ser	Ala	Lys	Ile	Leu	Val	Glu	Asn	Glu	Pro	Asn	180	185	190	
Val	Ser	Tyr	Ile	Cys	Ser	Arg	Tyr	Tyr	Arg	Ala	Pro	Glu	Leu	Ile	Phe	195	200	205	
Gly	Ala	Thr	Asn	Tyr	Thr	Thr	Lys	Ile	Asp	Val	Trp	Ser	Thr	Gly	Cys	210	215	220	
Val	Met	Ala	Glu	Leu	Met	Leu	Gly	Gln	Pro	Leu	Phe	Pro	Gly	Glu	Ser	225	230	235	240
Gly	Ile	Asp	Gln	Leu	Val	Glu	Ile	Ile	Lys	Val	Leu	Gly	Thr	Pro	Thr	245	250	255	
Arg	Glu	Gln	Ile	Arg	Thr	Met	Asn	Pro	Asn	Tyr	Met	Glu	His	Lys	Phe	260	265	270	
Pro	Gln	Ile	Lys	Pro	His	Pro	Phe	Asn	Lys	Val	Phe	Arg	Arg	Ala	Pro	275	280	285	
His	Glu	Ala	Ile	Asp	Leu	Ile	Ser	Ala	Leu	Leu	Glu	Tyr	Thr	Pro	Thr	290	295	300	
Gln	Arg	Leu	Ser	Ala	Ile	Glu	Ala	Met	Cys	His	Pro	Phe	Phe	Asp	Glu	305	310	315	320
Leu	Arg	Asp	Pro	Asn	Thr	Arg	Leu	Pro	Asp	Ser	Arg	His	Pro	Gly	Gly	325	330	335	
Ala	Ala	Arg	Asp	Leu	Pro	Asn	Leu	Phe	Asp	Phe	Ser	Arg	His	Glu	Leu	340	345	350	

Ser Ile Ala Pro Ala Leu Asn Ser Arg Leu Val Pro Pro His Ala Arg  
 355 360 365

Ala Ala Leu Glu Ala Arg Gly Leu Asp Ile Asp Asn Phe Thr Pro Leu  
 370 375 380

Thr Lys Glu Glu Met Met Ala Arg Leu Asp  
 385 390

<210> 163  
 <211> 2539  
 <212> DNA  
 <213> *Aspergillus fumigatus*

<400> 163  
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 gcgctgtggc atggcgatcc gatcagggag atgatgacat cgtggacagg ttgtgggaga 180  
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 aatcaactcc ctgcactgtc caaaagacct atttttctgc caatcggacc gcagatggct 720  
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2539

&lt;210&gt; 164

&lt;211&gt; 1539

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 164

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catttcaatg ctttgtccta catgatccgt gaagagtaca aggcagccgg gtacaggatg 1140
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gtcggtggtc tggtcacgaa gaaaggtctc tgggatgggt tctggaacaa tgttttcggt 1440
cagcctgtgg aagacgagga tgactatctc tgggaggatg aggatgaagt ggcagaggcg 1500
gagcgcaaga tgatacctgc gaagacgagt agctcgtga 1539

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&lt;210&gt; 165

&lt;211&gt; 1539

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 165

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tgcagcgcca ataccttgaa tatgctcctt gaacctaaat acgatgccct catgtcacgg 720
acacggaacc ggccgtagt gcgggggcta ctctcacgcc gtgctgcggt attgtttgcg 780
attgcgactg ctgctgcagg tctcggtttg ttatacattg gaacgaacct tacgactact 840
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```

```

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cagcctgtgg aagacgagga tgactatctc tgggaggatg aggatgaagt ggcagaggcg 1500
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<210> 166

<211> 512

<212> PRT

<213> *Aspergillus fumigatus*

<400> 166

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Met Ile Tyr Leu Arg Ser Ser Leu Leu Arg Ser Gly Leu Ala Arg Asp
 1             5             10             15

```

```

Pro Ala Arg Leu Cys Ser Gln Cys Phe Ser Arg Leu Ser Pro Ser Arg
      20             25             30

```

```

Arg Pro Val Ala Val Arg Ser Phe Phe Ser Ser Ser Arg Leu Arg Ala
      35             40             45

```

```

Gly Ile Ala Asp His Glu Ser Thr Pro Ser Thr Val Gln Lys Thr Tyr
      50             55             60

```

```

Phe Ser Ala Asn Arg Thr Ala Asp Gly Leu Leu Ala Ser Leu Ser Ala
      65             70             75             80

```

```

Val Asn Ser Ser Pro Arg Ser Ile Ala Asp Asn Ala Leu Ser Gln Gly
      85             90             95

```

```

Ala Ala Ser Ser Glu Ser Ile Thr Ser Gln Ser Thr Ser Gln Glu Leu
      100            105            110

```

```

Pro His Arg Arg Arg Lys Arg Leu Lys Glu Glu Ala Ala Lys Asn Asn
      115            120            125

```

```

Ala Ala Glu Thr Glu Leu Pro Pro Asp Ala Ser Ser Gln Leu Ser Thr
      130            135            140

```

```

Leu Ser Ser Ala Leu Pro Ala Thr Ser Leu Arg Arg Lys Leu Ala Ala
      145            150            155            160

```

```

Phe Leu Ala Leu Thr Lys Pro Arg Leu Ser Phe Leu Ile Val Leu Thr
      165            170            175

```

```

Thr Thr Ser Ala Tyr Gly Met Tyr Pro Ile Ser Ser Leu Leu Thr Leu
      180            185            190

```

```

Asp Pro Ser Met Thr Pro Leu Pro Thr Leu Ser Thr Ser Thr Leu Thr
      195            200            205

```

Phe	Leu	Tyr	Leu	Thr	Thr	Gly	Thr	Phe	Leu	Ser	Ser	Cys	Ser	Ala	Asn	210	215	220
Thr	Leu	Asn	Met	Leu	Leu	Glu	Pro	Lys	Tyr	Asp	Ala	Leu	Met	Ser	Arg	225	230	235
Thr	Arg	Asn	Arg	Pro	Leu	Val	Arg	Gly	Leu	Leu	Ser	Arg	Arg	Ala	Ala	245	250	255
Val	Leu	Phe	Ala	Ile	Ala	Thr	Ala	Ala	Ala	Gly	Leu	Gly	Leu	Leu	Tyr	260	265	270
Ile	Gly	Thr	Asn	Pro	Thr	Thr	Thr	Ala	Leu	Ser	Ala	Ser	Asn	Ile	Cys	275	280	285
Leu	Tyr	Ala	Phe	Val	Tyr	Thr	Pro	Leu	Lys	Arg	Ile	Ser	Val	Ile	Asn	290	295	300
Thr	Trp	Val	Gly	Ala	Val	Val	Gly	Gly	Ile	Pro	Pro	Leu	Met	Gly	Trp	305	310	315
Thr	Ala	Ala	Ala	Gly	Gln	Thr	Ala	Thr	Thr	Gly	His	Asp	Ser	Trp	Arg	325	330	335
Asp	Met	Leu	Phe	Ser	Lys	Asp	Ser	Ile	Gly	Gly	Trp	Leu	Leu	Gly	Gly	340	345	350
Ile	Leu	Phe	Ala	Trp	Gln	Phe	Pro	His	Phe	Asn	Ala	Leu	Ser	Tyr	Met	355	360	365
Ile	Arg	Glu	Glu	Tyr	Lys	Ala	Ala	Gly	Tyr	Arg	Met	Leu	Ala	Trp	Thr	370	375	380
Asn	Pro	Ala	Ala	Asn	Ala	Arg	Val	Ala	Leu	Arg	Tyr	Ser	Leu	Leu	Met	385	390	395
Phe	Pro	Phe	Ser	Val	Gly	Leu	Trp	Trp	Val	Gly	Val	Val	Gly	Asn	Gly	405	410	415
Phe	Leu	Val	Gly	Ser	Thr	Ala	Ala	Asn	Gly	Trp	Leu	Val	Lys	Glu	Ala	420	425	430
Tyr	Lys	Phe	Trp	Arg	His	Gln	Gly	Ala	Asn	Gly	Ser	Ala	Arg	Arg	Leu	435	440	445
Phe	Trp	Ala	Ser	Ile	Trp	Gln	Leu	Pro	Ile	Leu	Leu	Val	Gly	Gly	Leu	450	455	460
Val	Thr	Lys	Lys	Gly	Leu	Trp	Asp	Gly	Val	Trp	Asn	Asn	Val	Phe	Gly	465	470	475
Gln	Pro	Val	Glu	Asp	Glu	Asp	Asp	Tyr	Leu	Trp	Glu	Asp	Glu	Asp	Glu	485	490	495
Val	Ala	Glu	Ala	Glu	Arg	Lys	Met	Ile	Pro	Ala	Lys	Thr	Ser	Ser	Ser	500	505	510



<210> 167  
 <211> 2679  
 <212> DNA  
 <213> *Aspergillus fumigatus*

<400> 167  
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 atctcttttat ctgatttcgat caataccggg agtactgcaa ggaggacaag tagacaggca 180  
 tctcgagaat tccgtgagaa agcaaggtagc agaagagaac tactccgtac tctgtactct 240  
 gtagagaaag gcaggagggt caaacatgat tggcccgtgg agaataagaa aatatcatgc 300  
 cttaggtcca aaggctagtg ctcacatgac cttatcagtt gagtcagggtg atcttatcgt 360  
 tgtcccagag agatgtgaag aattattgca ccggggagca cgcaaggaaa ccattctatc 420  
 ctatctcgtc ccttttagatt accacaggac atctacatct tgaaccttac cattccaaat 480  
 tacagactgc ctctgagtag atgctcaacg ccgcggttgc tgccccgcga tgttttgtat 540  
 atcccactga tcgcgcagca atgcgcttgg gctttgctct tcgtctctcc tctcctgcac 600  
 ctctcttctc aacagcacct ttccgtcgac agttgcatgc ttccggcgctc cgatcaattg 660  
 aacctgttat ctttcgaaat agccttgaaa agactcttga ggctcatcga tcctccaatc 720  
 gagccagtct gatccgcaag gtgattaacc acgattgtcc tgctgaaacg cccctccaa 780  
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 cccgttcgcc cagccaagta gccacccgcg agccccagac aacagaatat ccacaactgc 960  
 aatggcatgc agatgaaacc aagggccgac cggcacaagg tccttggttg aagtacttga 1020  
 ctaccgattg gaaaacgccc gatgccgttt cgcgtctcga cgcggagatc cgcgctcttg 1080  
 agctctacat gacaccgacc ccgtcggagc ggaactgagat agatcgggtg gttgcagata 1140  
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 cgcgatttgc cttgagccac tcgggtctcg attttgtctt acctgtcccg gattcagacc 1260  
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 aaaagctctt acatgaagtg ggacatgcgc ttacagcagtc cccctcgttc gcgagcgag 1380  
 tccgcatcat aggcagccgt ttccccgtcc tctcagccat ccacgcgcc acgggcccgc 1440  
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 tcacgccggg gtatgagaac tccagggtta gcaataccaa caatcgacat gtatggcacc 2580  
 gcaaggaaaa gcaccgcgga accatacgag gatatacgat cgatcaattg ctgcccctct 2640  
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<210> 168  
 <211> 1629  
 <212> DNA  
 <213> *Aspergillus fumigatus*

<400> 168  
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 ccccggtctt ctgcgcctgc gagacgagcg cagaggaagg cccgttcgcc cagccaagta 420  
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 aagggccgac cggcacaaaag tccttggctg aagtacttga ctaccgattg gaaaacgccc 540  
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 gcaagtctca agcgtctggg tgacagtga cggccgcga acgttagtat cctgacacgg 1560  
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<210> 169  
 <211> 1629  
 <212> DNA  
 <213> *Aspergillus fumigatus*

<400> 169  
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 ttccccgtcc tctcagccat ccatcgcccc acgggcccgc tgctgcagtt cactgcggt 960

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<210> 170

<211> 542

<212> PRT

<213> *Aspergillus fumigatus*

<400> 170

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      20                      25                      30

Ala Pro Leu Phe Ser Thr Ala Pro Phe Arg Arg Gln Leu His Ala Ser
      35                      40                      45

Gly Val Arg Ser Ile Glu Pro Val Ile Phe Arg Asn Ser Leu Glu Lys
      50                      55                      60

Thr Leu Glu Ala His Arg Ser Ser Asn Arg Ala Ser Leu Ile Arg Lys
      65                      70                      75                      80

Val Ile Asn His Asp Cys Pro Ala Glu Thr Pro Pro Pro Ile Leu Pro
      85                      90                      95

Leu Glu Asn Arg Ala Gly His Asp Gln Ser Ser Gln Lys Ala Ser Ser
      100                     105                     110

Val Ser Asn Ala Glu Ser Glu Ser Pro Arg Ser Ser Ala Pro Ala Arg
      115                     120                     125

Arg Ala Gln Arg Lys Ala Arg Ser Pro Ser Gln Val Ala Thr Pro Gln
      130                     135                     140

Pro Gln Thr Thr Glu Tyr Pro Gln Leu Gln Trp His Ala Asp Glu Thr
      145                     150                     155                     160

Lys Gly Arg Pro Ala Gln Ser Pro Trp Leu Lys Tyr Leu Thr Thr Asp
      165                     170                     175

Trp Lys Thr Pro Asp Ala Val Ser Arg Leu Asp Ala Glu Ile Arg Ala
      180                     185                     190

Leu Glu Leu Tyr Met Thr Pro Thr Pro Ser Glu Arg Thr Glu Ile Asp
      195                     200                     205

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Arg Leu Val Ala Asp Met Gly Arg Leu Leu Ala Gly Ile Val Pro Ser  
 210 215 220  
 Pro Pro Gln Val Thr Gly Ser Trp Arg Thr Arg Phe Ala Leu Ser His  
 225 230 235 240  
 Ser Gly Leu Asp Phe Val Leu Pro Val Pro Asp Ser Asp Arg Ser Thr  
 245 250 255  
 Arg Asp Val Arg Lys Pro Ser Ala Thr Arg Pro Lys Val Leu Gln Thr  
 260 265 270  
 Tyr Lys Lys Leu Leu His Glu Val Gly His Ala Leu Gln Gln Ser Pro  
 275 280 285  
 Ser Phe Ala Glu Arg Val Arg Ile Ile Gly Ser Arg Phe Pro Val Leu  
 290 295 300  
 Ser Ala Ile His Arg Pro Thr Gly Arg Leu Leu Gln Phe His Cys Gly  
 305 310 315 320  
 Glu Gly Leu Pro Ala Ser Val Glu Tyr Ile Met Asp Tyr Gln Ala Glu  
 325 330 335  
 Tyr Pro Ser Ile Arg Pro Leu Tyr Val Thr Ala Arg Leu Ile Leu Glu  
 340 345 350  
 Ala Arg Gly Arg Tyr Gly Arg Thr Gln Met Ser Ile Glu Ser Asp Ala  
 355 360 365  
 Leu Val Met Leu Leu Val Ala Phe Leu Lys Met Asn His Gly Arg Phe  
 370 375 380  
 Gln Arg Pro Asp Cys Leu Gly Glu Gln Leu Ile Ala Phe Leu Arg Ala  
 385 390 395 400  
 Tyr Gly Ser Asp Ile Asp Leu Thr Thr Thr Gly Val Ser Val Asp Pro  
 405 410 415  
 Pro Ser Trp Phe Asn Ala Ser Thr Val Lys Arg Ala Ser Ala Leu Tyr  
 420 425 430  
 Ala Pro Asp Asp Leu Pro Ala His Leu Arg Gly Gln Arg Ser Leu Ile  
 435 440 445  
 Ser Leu Lys Arg Thr Ala Ala Ala Arg Arg Asn Leu Pro Ala Ala Ser  
 450 455 460  
 Arg Leu Cys Val Gln Asp Pro Thr Asn Tyr Met Asn Asp Leu Gly Arg  
 465 470 475 480  
 Ser Cys Val Arg Thr Leu Glu Leu Gln His Thr Phe Ser Leu Ala His  
 485 490 495  
 Asp Arg Leu Gly Ala Ser Leu Lys Arg Trp Asp Asp Ser Glu Pro Ala  
 500 505 510

Ala Asn Val Ser Ile Leu Thr Arg Ala Leu Gln Ala Asn Phe Ser Asp  
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Phe Glu Asn Leu Arg Ala Lys Ser Leu Lys Leu Asn Ala Thr  
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<210> 171

<211> 1573

<212> DNA

<213> *Aspergillus fumigatus*

<220>

<221> modified\_base

<222> (683)

<223> a, c, g, t, unknown or other

<400> 171

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cagctagctt cacttgagat atcacaagat gctttggtcg gcctgccacg aggtcttgct 180
ccatgtcaac cacgaggatt cagtctctgc ctcatctcag tccaggcgag gtttctttgc 240
tggatcttgc ggctgatgac cctcgcgatg tgggtgccct gtccgacaag gaagcgttga 300
ttttgcagct ctacaatcaa atccaggaac tggaaactgga aaaggcactt cttgaacaag 360
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ccacgtacac ggtcaggaga aaggccacca gtactgtcct gatgactgat ccaacattaa 600
aagctgttca cttgaaagct atatcacctg ttgaaagggt ttacctcctt tcagtttatg 660
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<210> 172

<211> 573

<212> DNA

<213> *Aspergillus fumigatus*

<220>

<221> modified\_base

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atatcacctg ttgaaagggt ttacctcctt tcagtttatg cgagcatttc aattctgcat 180
tcncctatac taacgcttca tagagctctt ctacccttgg tcaaccggcg tgatgtgttg 240
tctttggcac atgagaacct aatgaatgcg cacaacgcga ctttgaggga actatccaat 300
ttagaagtac aaaatctaga gctacaccag aggaatcaag agctagcgcg gcagcttctt 360
gagtccgcga aggatgatga ttcattggaga gaagcactgg atgatgacga cctcaaggca 420
caacttgagc agctagaggc cgatcgcaaa aagagcaaat caagatggga agtcatgaaa 480
agcgttgcaa gtgctattgt tgtgggaagt ggagtgaact gggctgaaga cgatgagctt 540
acagctctag tcattgatga atctgatgat taa 573

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<210> 173
<211> 573
<212> DNA
<213> Aspergillus fumigatus

<220>
<221> modified_base
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<223> a, c, g, t, unknown or other

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<400> 173
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atatcacctg ttgaaagggt ttacctcctt tcagtttatg cgagcatttc aattctgcat 180
tcncctatac taacgcttca tagagctctt ctacccttgg tcaaccggcg tgatgtgttg 240
tctttggcac atgagaacct aatgaatgcg cacaacgcga ctttgaggga actatccaat 300
ttagaagtac aaaatctaga gctacaccag aggaatcaag agctagcgcg gcagcttctt 360
gagtccgcga aggatgatga ttcattggaga gaagcactgg atgatgacga cctcaaggca 420
caacttgagc agctagaggc cgatcgcaaa aagagcaaat caagatggga agtcatgaaa 480
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<210> 174
<211> 190
<212> PRT
<213> Aspergillus fumigatus

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<400> 174
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Thr Val Arg Arg Lys Ala Thr Ser Thr Val Leu Met Thr Asp Pro Thr
          20             25             30

Leu Lys Ala Val His Leu Lys Ala Ile Ser Pro Val Glu Arg Phe Tyr
          35             40             45

Leu Leu Ser Val Tyr Ala Ser Ile Ser Ile Leu His Ser Pro Ile Leu
          50             55             60

Thr Leu His Arg Ala Leu Leu Pro Leu Val Asn Arg Arg Asp Val Leu
          65             70             75             80

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Ser Leu Ala His Glu Asn Leu Met Asn Ala His Asn Ala Thr Leu Arg  
85 90 95

Glu Leu Ser Asn Leu Glu Val Gln Asn Leu Glu Leu His Gln Arg Asn  
100 105 110

Gln Glu Leu Ala Arg Gln Leu Leu Glu Ser Ala Lys Asp Asp Asp Ser  
115 120 125

Trp Arg Glu Ala Leu Asp Asp Asp Asp Leu Lys Ala Gln Leu Glu Gln  
130 135 140

Leu Glu Ala Asp Arg Lys Lys Ser Lys Ser Arg Trp Glu Val Met Lys  
145 150 155 160

Ser Val Ala Ser Ala Ile Val Val Gly Ser Gly Val Asn Trp Ala Glu  
165 170 175

Asp Asp Glu Leu Thr Ala Leu Val Ile Asp Glu Ser Asp Asp  
180 185 190

&lt;210&gt; 175

&lt;211&gt; 2593

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 175

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gcttcgactg gaaattcgga gatcgccata tatttgagtt atgtaagcac cgccgcaggc 180
gtctcattgg gctggggaag ctatcaacaa ccaccagag cttcttgaac ttaactccgg 240
gggtgcata ctaatagttt caataatgga cgtcggatgc tttgtaaatc aacggcggtc 300
ctacaatggg gatctatgca cagttcgta cataggtaaa gttgagggca ccaccggcga 360
gtggctcgga gtggaatggg atgacccac gcgggggaag cattctggag aacacaacgg 420
agtgaatat ttacatgta tgaaagtatt ttcaagactg gatagagcgg attgactgac 480
ttgaacggaa ggtagaagga aacacccac ggctgggtcg ttcgtgcgcc cttcgcgacg 540
gaccgacaga cctcgaggct tccttgaggc agtgcgtcac aagtatgctt ctgagttcca 600
agaagaactc gcaagacagc agtcaggcga agtctctgct gcgcgggaaa tcatcaaatt 660
tagtagcaaa gtagtggaag aggtcggctt cgacaagatc cggaagaaac ttgcagagct 720
ccaggaattg aaaatcgtgc tcctggatcg cctatgcatc gcaggagttc tcctcatag 780
agcgagtcta catgagcttg cagaggcttg caaggagata gaacagacat gtcctaagat 840
cgttgacctc gatctgagtt acaacttact ggaaagctgg gttgacattg caaacatatg 900
tcaacagctg aagcgcttga agacattgaa gctgatgttg gtcattcagt acatctgtga 960
gaagcatgct gacagttggc agcggaaatc gtctaggtcc tcgacaggag ggtctgatat 1020
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atcagttagt	tccggtgcaa	accaagaaca	atttcgagtt	cagaagatcc	cgagatcctt	1920
taatacatat	caagtcaagg	caatcgccctc	ccgcctgttc	aatttgccgc	cttaccagtg	1980
ccgactagtc	tgggagacca	acgagttaga	ccctattcat	caggagaaaa	aggacgatgg	2040
agacgattgg	gatagtgatg	aggatgaagc	cacagctatt	ggattggggg	agagtaacaa	2100
gctcacaccg	gcgacggagg	atggaaaagt	catcagaaga	gaggttgagc	tcctggattc	2160
aacgcgagac	ataggctttt	ggttccaacc	cgatactgtt	gaggcaagga	tcagagtaga	2220
agttgcaaca	tcgaattgac	aactatttcg	acataggagt	tgtgaaggag	ttccttaacc	2280
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aagctggagg	gcaacactga	ctgctgtttt	aggactaggt	cgggttttgg	tggcagatta	2520
tcaccgcaac	tgttttgtga	taacagtgat	atcatttccc	tttcatataa	caattttaata	2580
ctcagacatc	gtc					2593

&lt;210&gt; 176

&lt;211&gt; 1974

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 176

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cccacgcggg	ggaagcatte	tggagaacac	aacggagtga	gatattttac	atgtatgaaa	180
gtattttcaa	gactggatag	agcggattga	ctgacttgaa	cgggaaggtag	aaggaaacac	240
cccacggctg	gttcgttcgt	gcgcccttcg	cgacggaccg	acagacctcg	aggcttcctt	300
gaggcagtg	gtcacaagta	tgcttctgag	ttccaagaag	aactcgcaag	acagcagtc	360
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tatgctctg	gcatggaagg	aaactctctt	cagttttccg	aaaatctcag	atcgggtggac	1140
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gggctgcaat	ctttgcgcat	atcaggaat	ccctgtacg	acaagcctgt	tgccccctcg	1260
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aagttcatca	gaagagaggt	tgaactcctg	gagatcaacg	gagacatagg	cttttggttc	1920
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<210> 177  
 <211> 1830  
 <212> DNA  
 <213> *Aspergillus fumigatus*

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 ccacgcggg ggaagcattc tggagaacac aacggagtga gatattttac atgtagaagg 180  
 aaacacccca cggtcggttc gtctcgcgac ccttcgcgac ggaccgacag acctcgaggc 240  
 ttccttgagg cagtgcgtca caagtatgct tctgagttcc aagaagaact cgcaagacag 300  
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 gaggtcggtc tgcacaagat ccggaagaaa cttgcagagc tccaggaatt gaaaatcgtg 420  
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 gcagaggctt gcaaggagat agaacagaca tgtcctaaga tcggtgacct cgatctgagt 540  
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 gagagtaaca agctcacacc ggcgacggag gatggaaagt tcatcagaag agagggttag 1740  
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 atcagagtag aagttgcaac atcgaattga 1830

<210> 178  
 <211> 609  
 <212> PRT  
 <213> *Aspergillus fumigatus*

<400> 178  
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 20 25 30  
 Trp Leu Gly Val Glu Trp Asp Asp Pro Thr Arg Gly Lys His Ser Gly  
 35 40 45  
 Glu His Asn Gly Val Arg Tyr Phe Thr Cys Arg Arg Lys His Pro Thr  
 50 55 60

150

Ala	Gly	Ser	Phe	Val	Arg	Pro	Ser	Arg	Arg	Thr	Asp	Arg	Pro	Arg	Gly	65	70	75	80
Phe	Leu	Glu	Ala	Val	Arg	His	Lys	Tyr	Ala	Ser	Glu	Phe	Gln	Glu	Glu	85	90	95	
Leu	Ala	Arg	Gln	Gln	Ser	Gly	Glu	Val	Ser	Ala	Ala	Arg	Glu	Ile	Ile	100	105	110	
Lys	Phe	Ser	Ser	Lys	Val	Val	Glu	Glu	Val	Gly	Phe	Asp	Lys	Ile	Arg	115	120	125	
Lys	Lys	Leu	Ala	Glu	Leu	Gln	Glu	Leu	Lys	Ile	Val	Leu	Leu	Asp	Arg	130	135	140	
Leu	Cys	Ile	Ala	Gly	Val	Leu	Pro	His	Arg	Ala	Ser	Leu	His	Glu	Leu	145	150	155	160
Ala	Glu	Ala	Cys	Lys	Glu	Ile	Glu	Gln	Thr	Cys	Pro	Lys	Ile	Val	Asp	165	170	175	
Leu	Asp	Leu	Ser	Tyr	Asn	Leu	Leu	Glu	Ser	Trp	Val	Asp	Ile	Ala	Asn	180	185	190	
Ile	Cys	Gln	Gln	Leu	Lys	Arg	Leu	Lys	Thr	Leu	Lys	Leu	Met	Leu	Val	195	200	205	
Ile	Gln	Tyr	Ile	Cys	Glu	Lys	His	Ala	Asp	Ser	Trp	Gln	Arg	Lys	Ser	210	215	220	
Ser	Arg	Ser	Ser	Thr	Gly	Gly	Ser	Asp	Ile	Arg	Arg	Tyr	His	Asn	Thr	225	230	235	240
Thr	Leu	Gly	Arg	Asp	Ser	Thr	Arg	Met	Gly	Arg	Gly	Met	Leu	His	Lys	245	250	255	
Ala	Thr	Ala	Trp	Leu	Pro	Ile	Thr	Gln	Ile	Leu	Thr	Pro	Ile	Thr	Asp	260	265	270	
Thr	Ile	Thr	Thr	Leu	Thr	Leu	Glu	Asn	Asn	Asp	Ile	Ser	Ser	Leu	Ser	275	280	285	
Ser	Leu	Ala	Cys	Leu	Thr	Ser	Leu	Ser	Lys	Leu	Glu	His	Leu	Ser	Leu	290	295	300	
Arg	Glu	Asn	Arg	Ile	Gly	Lys	Val	Tyr	Ala	Ser	Gly	Met	Glu	Gly	Asn	305	310	315	320
Ser	Leu	Gln	Phe	Ser	Glu	Asn	Leu	Arg	Ser	Val	Asp	Leu	Ser	Arg	Asn	325	330	335	
Asn	Ile	Asp	Ser	Trp	Leu	Phe	Val	Asn	Glu	Leu	Gln	Arg	Val	Phe	Pro	340	345	350	
Gly	Leu	Gln	Ser	Leu	Arg	Ile	Ser	Gly	Asn	Pro	Leu	Tyr	Asp	Lys	Pro	355	360	365	

Val Ala Pro Ser Asn Val Thr Asn Leu Pro Glu Lys Pro Met Thr Val  
 370 375 380  
 Asp Glu Ala Tyr Met Leu Thr Leu Ser Arg Leu Ala Ser Ile Gln Thr  
 385 390 395 400  
 Leu Asn Tyr Ser Lys Ile Thr Ser Gln Asp Arg Ser Asn Gly Glu Leu  
 405 410 415  
 Tyr Tyr Leu Ser Leu Ile Gly Lys Glu Leu Ser Ala Tyr Pro Glu Ser  
 420 425 430  
 Ala Glu Arg Glu Ile Leu Ala Thr His Pro Arg Tyr Gln Glu Leu Cys  
 435 440 445  
 Glu Lys Tyr Gly Ala Pro Thr Ile Arg Arg Ala Glu Leu Ala Gly Ala  
 450 455 460  
 Ala Val Asn Pro Arg Ser Val Ala Ala Arg Val Val Lys Leu Ala Phe  
 465 470 475 480  
 Cys Leu His Ser Ser Val Ser Ser Gly Ala Asn Gln Glu Gln Phe Arg  
 485 490 495  
 Val Gln Lys Ile Pro Arg Ser Phe Asn Thr Tyr Gln Val Lys Ala Ile  
 500 505 510  
 Ala Ser Arg Leu Phe Asn Leu Pro Pro Tyr Gln Cys Arg Leu Val Trp  
 515 520 525  
 Glu Thr Asn Glu Leu Asp Pro Ile His Gln Glu Lys Lys Asp Asp Gly  
 530 535 540  
 Asp Asp Trp Asp Ser Asp Glu Asp Glu Ala Thr Ala Ile Gly Leu Gly  
 545 550 555 560  
 Glu Ser Asn Lys Leu Thr Pro Ala Thr Glu Asp Gly Lys Phe Ile Arg  
 565 570 575  
 Arg Glu Val Glu Leu Leu Asp Ser Thr Arg Asp Ile Gly Phe Trp Phe  
 580 585 590  
 Gln Pro Asp Thr Val Glu Ala Arg Ile Arg Val Glu Val Ala Thr Ser  
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Asn

<210> 179

<211> 1867

<212> DNA

<213> *Aspergillus fumigatus*

<400> 179

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 gtagaacctc ttacgcaagc gcctgtggcc tctgttaccc gaatggattt agaggccttc 180

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ataaacagtga tatcatttcc ctttcatata acaatttaat actcagacat cgtcatggca 360
gaatactgga aatcagctgt aagtgccctt cattcagttc cgcagacttc ttcgtgataa 420
tctttacgtg gggaagtccg gcatcaactg acagcaatat tctagccccg gttctgggtgc 480
aaacaatgca agatattcat tcgggataca cccttcgaga aaaccagca tgaagcgagt 540
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ccaccggcag aacgacctgt gtccctggaa gagagaaaga agcagatagc gcagctggca 780
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gccagct
1867

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&lt;210&gt; 180

&lt;211&gt; 963

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 180

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tggtgcaaac aatgcaagat attcattcgg gataccctt tcgagaaaaa ccagcatgaa 180
gcgagtgcc aacaccaggg aaaccttaag cgtttcctac gagatatcca ccgggaaaat 240
gaacggaagc aaagagaaac tcagaaggcg aaggatgaag tcgagcgatt aaggcaact 300
gtcgcaggaa aaccagggtgc aaaagacagc ggcgcaacag cttggaaaca cgcctcggct 360
gccctccac cggcagaacg acctgtgtcc ctggaagaga gaaagaagca gatagcgag 420
ctggcagaga tgggaattgc tatcccgac gaataccgtg gtgaactcgc gctcgctggc 480
gaatggcaga cggtatccga acgagttatt cgaccagatg acgatacaga ggaaggaaa 540
cctggtagct ctatcggcgt tcggaaacgc aagatggaag gcgatgagga ggagcaggag 600
gcgcgacagg aggcgagag attcgtgagt cagggttggg gctcgaggac tcggcagtat 660
cctggggagc agagcgatgc agacctggat gcacttctaa attctaccaa ggatgtaaag 720
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tctgagggtg aagaagcggc gcagcttgct acaacagata cccagcggt gaagcaggaa 900
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963

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<210> 181  
 <211> 876  
 <212> DNA  
 <213> *Aspergillus fumigatus*

<400> 181  
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 aagcgtttcc tacgagatat ccaccgggaa aatgaacgga agcaaagaga aactcagaag 180  
 gcgaaggatg aagtcgagcg attaaggcaa actgtcgcag gaaaaccagg tgcaaaagac 240  
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 gacgaatacc gtggtgaact cgcgctcgct ggcgaatggc agacggtatc cgaacgagtt 420  
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 agtcaggggtt ggggctcgag gactcggcag tatcctgggg agcagagcga tgcagacctg 600  
 gatgcacttc taaattctac caaggatgta aagaagggtca agttgtcggc gccggatgaa 660  
 gggtcgaaaag agaaggctag caaagagggt gctacaccaa gcaacgatac ggaccaggct 720  
 gcggctcagg agtcagaact accatcagtc aagtctgagg gtaaagaagc ggcgcagctt 780  
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<210> 182  
 <211> 291  
 <212> PRT  
 <213> *Aspergillus fumigatus*

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 Ser Ala Lys His Gln Gly Asn Leu Lys Arg Phe Leu Arg Asp Ile His  
 35 40 45  
 Arg Glu Asn Glu Arg Lys Gln Arg Glu Thr Gln Lys Ala Lys Asp Glu  
 50 55 60  
 Val Glu Arg Leu Arg Gln Thr Val Ala Gly Lys Pro Gly Ala Lys Asp  
 65 70 75 80  
 Ser Gly Ala Thr Ala Trp Lys His Ala Ser Ala Ala Pro Pro Pro Ala  
 85 90 95  
 Glu Arg Pro Val Ser Leu Glu Glu Arg Lys Lys Gln Ile Ala Gln Leu  
 100 105 110  
 Ala Glu Met Gly Ile Ala Ile Pro Asp Glu Tyr Arg Gly Glu Leu Ala  
 115 120 125  
 Leu Ala Gly Glu Trp Gln Thr Val Ser Glu Arg Val Ile Arg Pro Asp  
 130 135 140  
 Asp Asp Thr Glu Glu Gly Lys Pro Gly Ser Ser Ile Gly Val Arg Lys  
 145 150 155 160

Arg Lys Met Glu Gly Asp Glu Glu Glu Gln Glu Ala Arg Gln Glu Ala  
 165 170 175  
 Glu Arg Phe Val Ser Gln Gly Trp Gly Ser Arg Thr Arg Gln Tyr Pro  
 180 185 190  
 Gly Glu Gln Ser Asp Ala Asp Leu Asp Ala Leu Leu Asn Ser Thr Lys  
 195 200 205  
 Asp Val Lys Lys Val Lys Leu Ser Ala Pro Asp Glu Gly Ser Lys Glu  
 210 215 220  
 Lys Ala Ser Lys Glu Gly Ala Thr Pro Ser Asn Asp Thr Asp Gln Ala  
 225 230 235 240  
 Ala Ala Gln Glu Ser Glu Leu Pro Ser Val Lys Ser Glu Gly Lys Glu  
 245 250 255  
 Ala Ala Gln Leu Ala Thr Thr Asp Thr Pro Ala Val Lys Gln Glu Glu  
 260 265 270  
 Glu Ala Ala Pro Thr Gly Val Val Phe Lys Lys Arg Lys Pro Lys Val  
 275 280 285  
 Leu Arg Lys  
 290

&lt;210&gt; 183

&lt;211&gt; 2193

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 183

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acaaaaaatg ggaacgaagt gaatgaggtt agatagagat gaggatggat caagaagcgc 240
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cgggatcagg ctaggctaga tagggttagc aacgaggggtg acatcacgtg agaacgggca 360
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agaaagtaaa taacaccact atggacatct cgcaagaaac cgttgataaa atacgacgtt 540
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atthttgacgc ttacaatcgc aagttggatg agacgttggc agagctgcag gctcaagtca 660
aacgtcatga ggatgagctc cgcaaggtac gtcaacaagt tgcctagaat ataagccgac 720
tgtcacaaga gatttcatgc atgaattagg aatactgaca agaggaacag ctacgcatga 780
ccaccacgat cgagttcgct caaattgggg cagatccttg ggcccgcatc tcagaagtgc 840
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ctagccatgg gaagcctaag aaacaaaaaa ctccggccgt ggggacttct gacagtggcc 1380

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aacagcggat  tgacgagctt  gttcgtcgcc  aaactgcgca  ggagggcaac  gagcaggcaa  1440
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ccctgtagcg  ttcttgccgt  ggaagcgctt  cttggacgaa  gtctttcttt  tcttggaaacg  2160
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<210> 184

<211> 1448

<212> DNA

<213> *Aspergillus fumigatus*

<400> 184

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<210> 185

<211> 1395

<212> DNA

<213> *Aspergillus fumigatus*

<400> 185

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ccgtccggac  caaatgatca  gccagaagct  aaacgtcctg  ccttggacaa  agtagtaaaag  120
ggaaacgagt  cggagaccta  tacggatgcc  aaggctgagc  cttccgctgc  gccaatgtgt  180

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actgctgatg gccagggcga cactgttggt cctgatgctc caaatggtaa ggggtgcatcc 240
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gaacagcagc gcccacaaga tgaatccagc tggattcaca ttcgcgctgt aatttctagc 360
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tctggagcaa agtgcactgt cagcgactac tcccgtgggtg cagtcgaacg tattttgacc 480
gtgagcggcc cacaggatgc cgttgccaag gcgtttgggt tgatcatccg tacattgaac 540
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&lt;210&gt; 186

&lt;211&gt; 464

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 186

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Asp Pro Ser Ser Pro Ser Gly Pro Asn Asp Gln Pro Glu Ala Lys Arg
      20              25              30

Pro Ala Leu Asp Lys Val Val Lys Gly Asn Glu Ser Glu Thr Tyr Thr
      35              40              45

Asp Ala Lys Ala Glu Pro Ser Ala Ala Pro Ser Ala Thr Ala Asp Gly
      50              55              60

Gln Gly Asp Thr Val Val Pro Asp Ala Pro Asn Gly Lys Gly Ala Ser
      65              70              75              80

Thr Glu Thr Gln Pro Ile Gln Ser Thr Ala Ser His Gly Glu Arg Ala
      85              90              95

Thr Ser Gln Pro Glu Gln Gln Arg Pro Gln Asp Glu Ser Ser Trp Ile
      100             105             110

His Ile Arg Ala Val Ile Ser Ser Gln Glu Ala Ala Thr Val Ile Gly
      115             120             125

Lys Gly Gly Glu Asn Val Ser Gln Ile Arg Arg Leu Ser Gly Ala Lys
      130             135             140

Cys Thr Val Ser Asp Tyr Ser Arg Gly Ala Val Glu Arg Ile Leu Thr
      145             150             155             160

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Val	Ser	Gly	Pro	Gln	Asp	Ala	Val	Ala	Lys	Ala	Phe	Gly	Leu	Ile	Ile	
				165					170					175		
Arg	Thr	Leu	Asn	Asn	Glu	Pro	Leu	Asp	Ala	Pro	Ser	Thr	Ala	Gln	Ser	
			180					185					190			
Lys	Thr	Tyr	Pro	Leu	Arg	Leu	Leu	Ile	Pro	His	Leu	Leu	Ile	Gly	Ser	
		195					200					205				
Ile	Ile	Gly	Lys	Gly	Gly	Ser	Arg	Ile	Arg	Glu	Ile	Gln	Glu	Ala	Ser	
	210					215					220					
Gly	Ala	Arg	Leu	Asn	Ala	Ser	Asp	Ser	Cys	Leu	Pro	Leu	Ser	Ser	Glu	
225					230				235						240	
Arg	Ser	Leu	Val	Ile	Leu	Gly	Val	Ala	Asp	Ser	Val	His	Ile	Ala	Thr	
				245					250					255		
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			260					265					270			
Gly	Pro	Ala	Ala	Ser	Ala	Tyr	Ala	Thr	Arg	Ser	Gly	Gly	Pro	Ala	Gly	
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	290					295					300					
Gly	Gly	Gln	Tyr	Gly	His	Pro	Glu	His	Phe	Lys	Arg	His	His	His	His	
305					310					315					320	
Pro	Asn	Arg	Ala	Ala	Ala	Gly	Ala	Tyr	Gly	Val	Pro	Tyr	Leu	His	Gly	
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Gln	Pro	Ala	Pro	Ala	Pro	Val	Ala	Gln	Pro	Ala	Leu	His	Tyr	Gly	Ala	
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Tyr	Gly	Ala	Pro	Gln	Pro	Ala	Gln	Ala	Arg	Gly	Ala	Pro	Thr	Pro	Ala	
	370					375					380					
Thr	Pro	Val	Gly	Gly	Val	Met	Pro	Gly	Gln	Pro	Leu	Thr	Gln	Gln	Ile	
385					390					395					400	
Tyr	Ile	Pro	Asn	Asp	Met	Val	Gly	Ala	Ile	Ile	Gly	Lys	Gly	Gly	Ala	
				405					410					415		
Lys	Ile	Asn	Glu	Ile	Arg	His	Leu	Ser	Gly	Ser	Val	Ile	Lys	Ile	Asn	
			420					425					430			
Glu	Pro	Gln	Glu	Asn	Ser	Asn	Glu	Arg	Leu	Val	Thr	Ile	Thr	Gly	Thr	
		435					440					445				
Gln	Glu	Cys	Asn	Gln	Met	Ala	Leu	Tyr	Met	Leu	Tyr	Ser	Arg	Leu	Gly	
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<210> 187  
 <211> 2121  
 <212> DNA  
 <213> *Aspergillus fumigatus*

<400> 187  
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&lt;210&gt; 189

&lt;211&gt; 1035

&lt;212&gt; DNA

<213> *Aspergillus fumigatus*

&lt;400&gt; 189

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&lt;210&gt; 190

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<213> *Aspergillus fumigatus*

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<213> *Aspergillus fumigatus*

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<213> *Aspergillus fumigatus*

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<210> 195

<211> 1059

<212> PRT

<213> *Aspergillus fumigatus*

<400> 195

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Gln Gln Tyr Gly Pro Asn Glu Leu Glu Gly Gly Glu Gly Val Ser Ile
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<213> Aspergillus fumigatus
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&lt;211&gt; 1059

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<213> *Aspergillus fumigatus*

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&lt;211&gt; 1059

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<213> *Aspergillus fumigatus*

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&lt;210&gt; 199

&lt;211&gt; 352

&lt;212&gt; PRT

<213> *Aspergillus fumigatus*

&lt;400&gt; 199

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Met Ser Val Val Val Leu Val Ser Lys Pro Thr Ala His Phe Ser Glu
  1                      5                      10                      15

Leu Ala Ser His His Arg Val Arg Val Ile Ile Thr Leu Ala Lys Ala
      20                      25                      30

Thr Met Ser His Pro Asp Leu Ser Thr Ile Leu Glu Val Tyr Pro Glu
      35                      40                      45

Cys Glu Val Thr Cys Tyr Gly Tyr Ala Pro Ser Gln Arg Arg Arg Cys
      50                      55                      60

Arg Met Arg Thr Arg Lys Asp Asn Arg Asp Arg Ala Ser Tyr Leu Leu
      65                      70                      75                      80

Glu Glu Gly Thr Arg Tyr Leu Gln Arg Gly Leu Pro Val Asp Gly Leu
      85                      90                      95

Leu Ile Glu Leu Ala Pro Leu Val Leu Cys Thr Arg Phe His Gln Tyr
      100                      105                      110

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Gln Ala Asp Asp Leu Val Arg Asp Trp Arg Ala Lys Leu Arg Glu Phe  
 115 120 125  
 Gln Gln Gln Thr Leu Leu Asn Ala Met Leu Lys Ser Leu Gln Glu Leu  
 130 135 140  
 Val Asp Ser Arg Ala Arg Ser Arg Ala Ala Arg Ser Ala Gly Arg Arg  
 145 150 155 160  
 Leu Pro Glu Arg Val Ser Ser Pro Thr Arg Leu Glu Arg Ser Ala Ala  
 165 170 175  
 Ile Val Thr Glu Glu Glu Pro Ala Ala Pro Glu Arg Glu Glu Glu Glu  
 180 185 190  
 Glu Glu Arg Gly Asp Arg Glu Asp Glu Pro Glu Pro Glu Pro Glu Pro  
 195 200 205  
 Glu Pro Glu Leu Thr Pro Ser Arg Ser Ser Thr Glu Thr Ser Ser Pro  
 210 215 220  
 Ala Val Glu Ala His Val Ala Glu Pro Thr Val Pro Gln Thr Glu Ser  
 225 230 235 240  
 Arg Arg Val Thr Arg Lys Pro Ile Glu Gly Asp Cys Thr Ile Cys Leu  
 245 250 255  
 Cys Pro Leu Arg Glu Gln Asp Ser Asp Glu Asn Gly Glu Gly Ser Glu  
 260 265 270  
 Asp Arg Asp Asp Glu Asn Glu Asp Asp Ala Ala Gly Thr Gly Ser Gly  
 275 280 285  
 Thr Ala Ser Asp Glu His Asp Ala Pro Glu Glu His Asp Asp Asp Asp  
 290 295 300  
 Leu Val Tyr Cys Lys Asn Gln Cys Gly Thr Asn Tyr His Lys Ala Cys  
 305 310 315 320  
 Ile Asp Val Trp His Ala Thr Gln Arg Thr Phe Glu Thr Pro Arg Gly  
 325 330 335  
 Asp Pro Ile Gly Leu Ser Cys Pro Tyr Cys Arg Ala Ala Trp Ser Ser  
 340 345 350